ANCIENT RACES
OF
BALUCHISTAN, PANJAB, AND SIND

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To

My father

CONTENTS

Introduction

This little book has its origin in the problems raised in the chapter entitled *Disposal of the Dead at Harappa* and published as an appendix to *The Aboriginal Races of India* (1954). It may also be considered a sequel to the publication of the report on the *Human Skeletal Remains from Harappa* (1962) by the Anthropological Survey of India. Fresh from the University the author had the opportunity of working at Harappa for one full season (1930-31) and then at Mohenjodaro for about two months towards the fall of 1931. This early association with 'solid facts', the basis of prehistory according to Gordon Childe, made an ever-lasting impression upon the author. The retrenchment policy of the then Government of India cut short his archaeological career in the midst of the Mohenjodaro excavations but being in an allied discipline, his interest did not wear out.

The publication of the Harappa Human Skeletal Remains Report is an achievement of the Anthropological Survey of India. Although it has been a repository of almost all the excavated human remains from different parts of India its publications on this score have never been always up to the standard. The said report is therefore the first

of its kind since the formation of the survey as an independent unit out of the Zoological Survey of India. The last report completed under the latter survey was in 1933—that on the human remains from Taxila.

The Harappa Human Skeletal Remains Report has seen the light of the day fundamentally through the initiative and indefatigable energy of Professor N. K. Bose, the then Director of the Survey. It was also through his good offices that the present author had the opportunity of studying the skeletal remains from the archaeological excavations at Brahmagiri, Lothal and Maski. The report on the Brahmagiri human remains was published in 1961. Thus there is a gap of about 25 years since the publication of the human remains excavated by Mackay at Mohenjodaro (1938) Even then, the two Mohenjodaro reports (Marshall, 1931 ; Mackay, 1938) are not complete since almost nothing is known of the rest of the skeleton excepting the crania. It is difficult to understand why the procedure followed in the study of the Nal human remains was not adopted in the case of the succeeding reports. And almost the same is the case with the present Harappa Report.

It appears to the present author that most of the reports on the human remains published so far in this country are devoid of archaeological context. The anthropologist treats the skeletons as an outsider. He does not appear to be so much interested in the culture, the owners of the skeletons are supposed to have built. The archaeologist again, having

no anthropological background, can hardly understand the bearings which however form the basis of archaeological study. In prehistoric archaeology of India a co-operative endeavour is a desideratum. This does not however mean that the anthropologist should merely be a bone-lifter in an archaeological excavation. Similarly an archaeologist opening a grave must try to determine evidences of the whole range of customs preceded and followed by a burial as done by Sir Cyril Fox in his *Life and Death in the Bronze Age.* The anthropologist is indeed of great help here with his knowledge of the present-day peoples. This does not apply in the case of graves only. The anthropologist should have a good knowledge of the peoples and the material culture of the area where excavation is in progress. It should also be the endeavour of the anthropologist to complete the identification of all the bones of a skeleton at the site. With my little knowledge of the archaeological excavations in India this is hardly done with the result that duplicate bones are found for the same skeleton. While there is a possibility of duplicate bones, as seen in the jar-burials of Harappa and in the megaliths of Brahmagiri, their presence in the case of single earth burials is probably explicable only due to a mix-up at the site. Reconstruction work may be done in the laboratory. And in this work an expert should be entrusted with so that, what happened with the Brahmagiri crania, as reported by the present writer, or with Schaeuble, in the case of the Boghaz-kui crania, is not repeated. A complete identification is all the more essential when

skeletons are recovered from jars or some sort of receptacles. In the Indus valley the saltpetre in the soil is so corrosive that this must be done at the very site. Bones are known to have been reduced to powders by the time they reach the laboratory.

In India we have various burial customs and magical practices involving even human sacrifice and head hunting. An archaeological site near about the head-hunting Naga villages may yield various types of decapitated skulls, as described by Guha and Basu. We have also the example of *Homo soloensis* with the base of the skull chopped off. The Egyptians before mumifying the dead used to break off the nasal septum in order to drill out the brain through it. Meadows Taylor has already shown instances of decapitated skulls at his excavations at Sholapur in Bombay.

While supporting the role of an anthropologist in archaeological excavations it should frankly be admitted as well, that the anthropologist in this country is not at the same time sufficiently equipped to render the archaeologist the necessary help. The curriculum of studies in Anthropology in this country has no such provision as well. There is unfortunately no unified syllabus in the different Universities teaching Anthropology in India.

As such, it is no wonder that in India an archaeologist looks upon an anthropologist with some reserve. But if one has to proceed from the known to the unknown and if one

has to build up culture from 'solid facts' an anthropologist is of immense help in all archaeological excavations. It is high time that a closer co-ordination between the two sister sciences in Indian Universities is aimed at.

The analysis of the Indus valley crania has led the author to raise his voice against the very use of the term Indo-Aryan. The constant use of the term Aryan both in linguistic and in ethnic sense has had many repercussions. In this connection an editorial in the British weekly *Nature* (April, 1938) pointed out Anthropology as "a science travestied in masquerade" because some were "forcing facts to fit in a biased and distorted dogma". I have no bias in fitting the Indus valley crania with those of Tepe Hissar. It is a matter which can be verified.

Now that the Indus Valley crania show a close affinity with those from Tepe Hissar why should we cling to the mystic term Indo-Aryan ? I have suggested the name Indo-Caspian instead. And thereto I have followed the trodden path of a famous neurologist and anthropologist of the rank of Ariens Kappers. He paved the way in his work—*An Introduction to the Anthropology of the Near East.* Had he lived to see the Harappa Human Skeletal Remains Report he might have reached the same conclusion as mine. At least he did so in saying "Caspian or Indo-Aryan".

My thanks are due to Dr. S. R. Das, Reader in Archaeology, Calcutta University for many helpful discussions.

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Calcutta, S. S. SARKAR.
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CHAPTER 1

NAL

Nal is a small village in the Jhalawan division of the Kalat State in Baluchistan. It is 3834 feet above sea level, and, as the crow flies, is 120 miles N. W. of Mohenjodaro. The excavated mound at Nal is known as Sohr Damb.

Excavations

Nal was first excavated in 1908 by the Hazara Pioneers under the command of Col. Jacob but there is no record of the antiquities found. There was similarly another excavation some time in 1923 or 1924. Hargreaves (1929) in 1926 carried out the first archaeological excavation and much of our knowledge is due to him. Regarding the earlier excavations Hargreaves remarks, "they had to some extent disturbed the site and confused the strata and, in no small measure, influenced the direction and extent of our operations".

Seven areas, called A-G in order of the letters, were excavated. Of these only A and E yielded human remains. Area A disclosed structural remains of "stone walls of thirteen rooms and courtyards".

Hargreaves concludes that "the stone walls were merely foundations, for on the top of several, two courses of sun-dried bricks were recovered seemingly in situ". Of the 13 rooms in area A, human remains were recovered from 5 rooms (Nos. 1, 6, 7, 12 and 13). Room No. 7 yielded burials of two adults and an infant. One of the above adults is that of the skull described by Sewell and Guha in Appendix V of the Hargreaves report. The description of the above skeleton is as follows :

"Careful knife work finally revealed a skull and eleven vessels, six to the north of it and five to the south and at varying distances long bones, some other bone fragments and a dorsal vertebra. The face of the skull was to the west". Some of the vessels contained human bones, such as, metatarsal and some phalanges along with animal bones. As such Hargreaves concludes :

"It is plain, therefore, that the burial was incomplete for no pelvic bones, shoulder blades, lower jaw, rib or the remainder of the vertebral column was traced".

On the other hand there was also a complete burial in the same room and the photograph (Pl. XII a) published by Hargreaves shows the presence of nearly all the bones of the skeleton. It was buried in a "barrel-shaped grave

edged with mud bricks set on edge. ....The body lay on the left side, head to the east, face to the south with the left arm bent, the hand advanced, the right arm similarly bent with the hand to the face. The body was not straight and the angle made at knees was about 50 degrees". This skeleton was not removed but "carefully covered with several feet of earth to await examination when the site is again excavated".

According to Hargreaves the above two burials are "possibly contemporary". The latter burial was found at a depth of "only three inches" lower than the former. But the two customs are so different both in tradition and in actual practice that their contemporary nature may possibly be questioned.

The infant grave from the same room No. 7 showed a complete skeleton and was also enclosed by mud bricks set on edge. The position in which the body was buried could not be judged. An almost similar infant grave was discovered from Room No. 13 at a depth of 9 feet 9 inches. Two more infants without mud brick enclosure were also found in the above room.

The rest of the skeletal remains has been called fractional burials by Hargreaves. For instance, the burial group I was accompanied with 7 funerary vessels and the bones, according to Sewell and Guha, showed remains of 4 adults and 2 children. The burial Group B in Room No. 6 showed a collection of 32 funerary vessels and the remains

belonged to 4 persons, 2 adults, one youth about 18 years old, and an infant, a year old. The first group was found "more or less on floor level" while the second at the time of "clearing the floor of A 6". Room No. 1, the largest of all the rooms, also yielded two layers of burial groups, all represented by fragmentary bones. The first layer comprising 7 groups (C) of burials, was found 2 feet 3 inches above floor level, while the second, yielded 6 groups (H) at 3 inches above floor level. The two burials were separated by "a stratum of sterile soil" and Hargreaves mentions the group H burials "as earlier and independent interments of the same type".

Six/seven crania, one lower jaw and the upper end of a long bone were found from the bank behind Room No. 2 at 1 foot 4 inches above floor level along with typical Nal pottery.

A female skeleton was found from Room No. 6 in the following state : "A large, broken, open bowl contained earth and five smaller vases. *In the earth and between the small vase* were pieces of a rib, part of a pelvic bone and many small bones. *These appear to have been placed therein.* The bones found outside and around the large bowl and the other vessels were of animals". It has been mentioned that the size of the vessel is too small to hold a complete skeleton.

Fragmentary human bones were also recovered along with funerary vessels from Room No. 12 at floor level.

Disposal of the Dead

It will be apparent from the previous description that we are probably dealing with two different methods of the disposal of the dead.

1. Earth burials—In this case complete bodies were buried once for all and there appears to be no adult/child variation. They appear to occur at somewhat deeper levels, (e.g., 9 feet 9 inches in the case of the infant from Room No. 7), than the other type of burial associated with funeral pottery. At Nal their number appears to be five (2 adults, 3 children) only, in comparison to about 30 individuals from the other.

2. Fractional burials—These appear to be the predominant form of disposal of the dead at Nal. They have been discovered from about 3 inches below floor level to about 2 feet 3 inches above the same. Here too no adult/child variation in burial appears to be present. They are almost always associated with pottery and animal bones. The bones appear to be uncharred and have been found both within and outside the vessels. The paucity of bones of the skeleton has led both Hargreaves, and Sewell and Guha, to refer to an earlier observation of Mockler (1877) who described the mode of interment of the ancient inhabitants of Makran in Baluchistan as follows: "the bones of the deceased were probably collected after the body had been exposed to the elements and attacks of carnivora for a certain time, and then placed, occasionally

in an earthen pot but more generally loose, on the floor of the '*damb*' or grave".

Skeletal Remains

The Nal skull belongs to a male "less than 26 years" of age. An interesting feature of the skull was the presence of a piece of stone in its mouth. Sewell and Guha describes it as "a flat stone, also of limestone, that is roughly crescentic in outline and measures 32 mm. in its long axis by 16 mm. transversely". ..... "The stone was situated immediately at the back of the hard palate below the base of the cranium and opposite to and to a large extent occluding the posterior nares". The skull shows on its occipital region three wormian bones—two at lambda "lying one behind the other in the median line" and one at the region of the left asterion. The superior piece at the lambda measures 14 mm. x 31 mm. while the inferior, 11 mm. x 25 mm. The asterionic piece measures 22 mm. x 18 mm. The estimated cranial capacity was found to be 1442.9 c.c.

The following are some of the important measurements :

Max. cranial length	..	188.5 mm.
Max. cranial breadth	..	132 mm.
Basion-bregma height	..	146 mm.
Auricular height	..	120 mm.
Length-breadth index	..	70.02

(a) *Femur*—The upper third of a femur belonging to a youth, aged about 18 years, showed "a very high degree of platymeria"—the platymeric index being

77.06. The posterior aspect of the above bone also showed "a very highly developed fossa hypotrochanterica".

(b) *Tibia*—An incomplete tibia showed a high degree of platycnemia—the platycnemic index being 68.7.

According to Sewell and Guha "the Nal skull approximates the Kish long-headed type" and they "have no hesitation in referring both to a branch of the Mediterranean race".

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CHAPTER 2

MOHENJODARO

Mohenjodaro is located in the district of Larkana in Sind. The site is reached from Dokri railway station on the Lahore-Karachi line. The mounds are situated about 9 miles east of the above railway station and about a mile and a half from the right bank of the river Indus.

Extensive excavations conducted for a number of years by Banerji, Marshall, Mackay and Wheeler have proved Mohenjodaro to be a highly developed urban centre of the Indus valley civilization. Since we are here concerned with human remains and the methods of their disposal we need not go into the details of the archaeological data. They are now well-known through the writings of the above authorities.

Skeletal Remains

The skeletal remains from Mohenjodaro comprise 41 individuals among which there were at least eight children. The first excavation (1922-27) under the direction of Sir John Marshall yielded 26 skeletons, while the second under E.J.H. Mackay, fifteen. There were at least 3 children in the former and 5 in the latter. The latter group offered an evidence of a beheaded child, about 12-14 years old, since a few vertebrae were found attached to the skull.

Of the 26 skeletons from the first excavation, 22 were complete or nearly complete skeletons, while three were represented by skulls alone. One of the skeletons (No. 4) was not received by Sewell and Guha (1931), who reported on the skeletal remains of this excavation. The details of the above skeletons are as follows :

1. Fourteen skeletons, 13 adults of both the sexes and one child, were found at a depth of 2 feet below surface in varied attitudes in Room No. 74 of House V, Section B, HR area. Skeleton No. 2 was found 6 inches above and almost at right angles to the legs of skeleton No. 8. It was probably the result of some tragedy (Nos. 2 & 5-16 of Sewell and Guha).

2. Skull No. 3 was found from House III, Block 2, HR area, from a depth of 2 feet 6 inches. It was found in a large potsherd along with a few fragmentary pieces of bones, "accompanied by a large number of other earthenware vessels

and a variety of small objects including balls, beads, chert flakes, a shell spoon, bits of ivory, and some miniature vessels".

3. One skeleton was found at a depth of 3 feet 9 inches from the courtyard of House I, Section I, HR area. Hargreaves (1931) described it as follows :

"The body which had been carefully buried lay on the left side, the head resting on the left hand, the face to the east". This skeleton appears to be No. 1 of Sewell and Guha's report. They have emphasized on the ground of the lesser fragility of the bones the recent nature of this skeleton in comparison to the others found in this area. They also found "a flat stone close up against the basis cranii at the back of the posterior nares", similar to that found in the Nal skull (p. 6).

4. Two skeletons were discovered by Hargreaves from a narrow alley, now called Deadman Lane, Section A, HR area. He writes : "At the point where the lane turns westward, the part of a skull and the bones of the thorax and upper arm of an adult were discovered, all in a very friable condition at a depth of 4 feet 2 inches. The body lay on its back diagonally across the lane. Fifteen inches to the west were a few fragments of a tiny skull" (Nos. 17 and 18 of Sewell and Guha). Marshall (1931) mentions "that the body was interred there under the floor of one of the then existing houses".

5. One skull of a young female was found at a depth of 6 feet below surface from Room No. 49, Block 2, HR area (Probably No. 19 of Sewell and Guha).

6. Six skeletons, 5 adults and one child, were found from a street between two houses in Block 3, VS area. This also appears to be due to some tragedy. Animal vertebrae were found lying over two of the above skeletons (Nos. 20-25 of Sewell and Guha).

7. A few fragments of a human skull and a few finger joints were also found from an oval jar from House XXI, Block 4, VS area. Vats thinks that they were remains of cremation pyres because of the presence of "human bones, charcoal and ashes".

Sewell and Guha have described a skull, which has been designated 'M' by them. Its archaeological details could not be gathered from the report. The authors have mentioned that this skull reached them "bearing no number". Could it be skull No. 4 which they say was not received by them ?

The archaeological bearing of skeleton No. 26 (Sewell and Guha) could not also be located.

Twelve crania were studied by the above authors for their report. Some of the cranial measurements, relevant to the present book, are given in Table 1.

The details of 15 skeletons from the second excavation at Mohenjodaro (1928-29) are as follows :

8. Nine skeletons, 4 adults and 5 children (M. 27-35), were found from the Long Lane outside House II, Block II,

TABLE 1

Measurements (in mm.) of Crania excavated during 1922-27.

Sr. No.	Measurements	Skull Nos. with sex in ( )											
		1 (F)	2 (M)	3 (M)	6 (M)	7 (F)	8 (M)	10 (F)	11 (M)	14 (inf.)	19 (F)	26 (F)	"M" (M)
1.	Max. cranial length	175.5	196	180.5 ?	178.5	173.5	172	179	195	164	188	—	199
2.	Max. cranial breadth	123	—	138.5 ?	128	120.5?	131	—	134 ?	140	108 ?	128	126
3.	Length-breadth index	70.08	—	76.73?	71.71	69.45?	71.16	—	68.72?	85.37	57.45?	—	63.32
4.	Auricular height	112	117?	120 ?	113	124	117	116	125	100	108 ?	118	124
5.	Basion-bregma height	131	—	133 ?	132	140 ?	130	140	137.5	118.5	128	—	141

DK area. The skeletons appeared to be victims of some tragedy because of the varied attitudes in which they were found. Two elephant's tusks were also found along with the skeletons. Bones of two adults (M. 30 & M. 34) showed evidences of charring. One of the children (M. 32) appeared to have been beheaded as already mentioned. The skull of M. 27, an adult male, presented evidences of a large depressed fracture (140 mm. x 30 mm.). M. 31 has been suggested to be a female child because of a copper bangle found on her right hand. An ivory comb found along with this group of skeletons appears to be, according to Mackay, of a different pattern from those previously found at Mohenjodaro. A new type of faience bead has also been found. The skeletons were found at an average depth of 5·9 feet below the surface of the mound.

It has been suggested by Mackay that all the skeletons were probably killed by raiders, but why that would prevent the following of the then typical practice of the disposal of the dead at Mohenjodaro is difficult to understand. It is also plausible that the dead were the raiders themselves who were covered with earth by the local people after they were killed.

9. One skull only (M. 36) in a very fragmentary condition was recovered from House I, Room 19, Block 7, DK area from a depth of 8 feet below datum (sea-level).

10. One skeleton of an adult female (?) from the north-western corner of the Western Court of Block I, DK area. The skeleton was lain on the left side and found in a very

bad state of preservation. The skull (M. 40) could be utilized for a few measurements.

11. Two skeletons were discovered from the stair case leading down into the Well Room 42, Block 8A, DK area. Two isolated crania were also found in the lane outside the Well Room. All the four crania (M. 41-44) were fragmentarily represented ; only M. 44 could be identified as an adult male.

Of the above skeletons only 4 crania, 2 adults and 2 children, were found suitable for a limited number of measurements. Some of the cranial measurements are given below (Table 2).

TABLE 2

Measurements (in mm.) of Mohenjodaro Crania excavated during 1928-29

Measurements				
Skull No.	M. 27	M. 28	M.32	M. 40
Sex	Male	Male	Child	Female
Max. cranial length	187	196	166	180
Max. cranial breadth	136	134	122	—
Length-breadth index	72.73	68.37	73.49	—
Auricular height	119	124	124	—
Basion-bregma height	—	—	134	—

Disposal of the Dead

The above evidence of the skeletal remains from Mohenjodaro does not furnish any clear data regarding the

disposal of the dead. Thirty-one* of 41 skeletons appear to be result of some tragic circumstances which befell the city from time to time. They do not appear to have been simultaneous because of the varying depths from which the skeletons have been discovered. Those from the tragedy at the HR area appear to be the latest of all, since the skeletons were found at a depth of only 2 feet below surface, while those from the DK area at a depth of 6 feet below surface. The depth of the skeletons from the VS area is not known.

Excluding therefore the 31 skeletons, which died under tragic circumstances, we are left with only 10 skeletons from which some idea may be formed regarding the nature of the disposal of the dead at Mohenjodaro. Out of these 10, four are represented by skulls alone, nothing is known of the rest of the skeleton. They are described under serial Nos. 5 (1 skull), 9 (1 skull) and 11 (2 skulls). Burials are almost evident in the case of serial Nos. 3, 4, and 10 while that of No. 7 appears to be a cremation. Serial No. 2, in which a skull was found along with a few fragmentary pieces of bones from a large potsherd, appears to be somewhat different from the above instances. It might have been a jar-burial similar to that found at Harappa, Cemetery H, Stratum I. It might as well have some affinity with the method of disposal of the Chanhudaro skull—the difference lies in the absence of a few fragmentary bones in the latter. Even if there were any, they might have disintegrated. Marshall (1931, p. 82)

* Sum of serial Nos. 1, 6, 8 & 11.

considers this as a fractional burial. It appears to the present writer that fractional burial is rather a misleading term. All the jar-burials of Harappa, or the megalithic burials of Brahmagiri are fractional in nature. A proper qualification is probably necessary when a burial is called fractional. The chances of the small fragmentary bones having been disintegrated in course of time require a thorough investigation.

Marshall however makes a clear case for cremation (p. 89) as is also apparent from the skeletal remains described under serial No. 7.

A few words are necessary regarding the three burials described under Serial Nos. 3, 4 and 10. Nos. 3 and 10 were females and found from courtyards of houses. That No. 4 is a floor burial has already been mentioned (p. 10). And the other two also appear to be of the same type. One such burial was discovered by the present writer at Harappa during 1930-31. It is worth while quoting his earlier observations (1937) regarding it.

"Since then, the present writer also removed two skeletons, which had their heads to the west. One of the above skeletons, which was unfortunately reburied, appears to the author to be a case of floor burial and it took him four complete days to expose the skeleton. It was found in trench IV of Mound F below the second stratum of building layers and a terracotta ringstand, usually used for keeping store jars on the floor of the house, was lying about a foot above the head of the skeleton. The head lay detached

from the skeleton at a distance of six inches from the body. A second lot of human remains was also found in the same trench, which however, forms a part of the Harappa collection. The latter had no skull with it ; only some bones of the upper extremity and a right tibia were found". That floor burial was in vogue at Mohenjodaro will be apparent from Marshall's description quoted before regarding the skeleton found in the Deadman Lane, HR area.

But the most difficult of all is to explain the presence of isolated skulls—4 such out of a total of 10 skeletons having been found at Mohenjodaro.

At the same time, the evidence of the Chanhudaro skull and the decapitated head of the child from DK area probably prevents us from supposing them to be the so-called fractional burials.

The presence of two skulls on the lane outside the Well Room in DK area does not appear to be the result of any accident, since no other portions of the skeletons were found, but probably a secluded spot for hiding human skulls. One of them was found from a brick-lined sediment-pit. The rest of the two skulls was found from rooms, one at a depth of 6 feet and the other at a depth of 8 feet (serial Nos. 5 & 9). They were thus not openly kept as at Jericho (Kurth, 1958). Were then the skulls those of the victims of human sacrifice or head hunting? Had they all been the natives of Mohenjodaro why is it that the heads were not disposed of in some customary manner ? Obviously Mohenjodaro had some custom regarding the disposal of the dead.

The tragedy of the DK area might have centered around the decapitated child, who was probably kidnapped from outside and to whose rescue his kith and kin came. An adult male skull (M. 27) showed signs of a large depressed fracture (p. 13). The two partially charred skeletons had also their skulls separated. This might have been caused from some local fire in the room—similar to that used by the local people for warming up during winter. In course of the encounter the bodies might have fallen upon the fire. The presence of two ivory tusks is again difficult to explain. They were neither carried away by the raiders nor were they recovered by the owner afterwards. Mackay thinks that the killed persons were ivory-workers themselves. The raiders had no use of tusk and "were not taken as loot". The assumption of the destruction of the city does not fit in with the depth of 6 feet for the above tusks and skeletons. The HR tragedy has been discovered at a depth of 2 feet below surface. Could the tusks be in any way connected with the sacrificial post ? Fixed diagonally in the form of an X with the curved pointed end upwards they could form a good sacrificial post[1]. But all these are mere speculations ! The two ivory tusks, the decapitated child along with other detached crania, the cranial fracture, the fire, the alabaster stand and lastly the foreign type of ivory comb and the faience bead are all probably associated together.

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1 One tusk was 3 feet 9.5 inches long and the other 2 feet 7.5 inches. The average diameter was 6 inches.

The paucity of human remains at Mohenjodaro probably supports Marshall's contention that cremation was the prevailing practice of the disposal of dead at Mohenjodaro. Probably this was towards the latter part of the civilization. Prior to that it is apparent that other methods of disposal of the dead were in vogue. There appear to be four such methods at Mohenjodaro. Two were floor burials, one a cremation and the other probably a case of jar burial similar to that found at Harappa, Cemetery H, Stratum I.

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CHAPTER 3

CHANHUDARO

Chanhudaro is an ancient mound situated half-a-mile south of the village of Jamal-Kirio, near Sakrand in the Nawabshah district of Sind. It stands on the left bank of the river Indus—the distance being about 12 miles.

Only one adult female skull was found "at the level of 9.2 feet above datum level at Locus 324, Mound II. It was found in a large storage jar within which were also present at the "same level as the skull a large conch shell and beneath a small hoard of copper and bronze implements".

The skull has been studied by Krogman and Sassaman (1943) and their report is published as Chapter XVI of the Chanhudaro Report.[1] It belongs to an adult female about 22-25 years of age. According to Krogman and Sassaman

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[1] Mackay, E. J. H. 1943. Chanhudaro Excavations 1935-36, New Haven.

the skull is dolichocranic—the index being 71.07. It is "small and smooth, with small teeth and short, broad palate and small mastoid processes. The supraorbital ridges are very slightly developed, but the glabella is relatively quite prominent. The occiput is smoothly rounded, with very slightly developed linae transversae and a very small inion. The cranial capacity (average of 10 trials) is 1222 c.c". The face is "unusually broad and flat". This is in harmony with the broad forehead, but the face contrasted with a long skull is disharmonic. Nasal aperture is broad and the orbits are "slightly angular and tend to be low". An os epitericum is present on both the temporal regions.

The authors conclude "that the Chanhudaro skull represents a Proto-Mediterranean type in which ancestral Negroid traits have manifested themselves".

Some of the important measurements of the cranium are as follows :

Max. cranial length	..	178	mm.
Max. cranial breadth	..	126.6	mm.
Basion-bregma height	..	123	mm.
Auricular height	..	108	mm.
Cranial index.	..	71.07	

CHAPTER 4

BALUCHISTAN

The hunan remains from Baluchistan and the methods of the disposal of the dead as revealed from them, are the results of two strenous tours undertaken by Sir Aurel Stein (1929, 1931). In the first tour during the early part of 1927 Stein covered Waziristan and Northern Baluchistan while Southern Baluchistan was explored in course of a second tour during the winter of 1927-28. Nal has already been separately dealt with because of its detailed study.

It may be noted here that the present work is concerned with human remains and the disposal of the dead, as could be gathered from the former. As such much of the other archaeological details have been omitted in summarising Stein's valuable work. He has discussed the burial customs of almost all the sites explored by him and shown parallelisms as well. They are so important in the understanding of the various methods of disposal of the dead in this country, and

also, in the context of the present work, that they cannot be ignored, how so lacking in details they may be.

1. **Periano-ghundai:** The mound of Periano-ghundai is located 4 miles due west of the military cantonment of Fort Sandeman in North Baluchistan. It is about 500 yards long (N.E.—S.W.) and about 350 yards wide. Situated in an angle formed by the right bank of the Zhob river and one of the wide flood beds of the Kapip stream the mound rises to a height of about 70 feet above the fairly level ground.

Noetling in 1898 first pointed out the archaeological importance of these sites. He also published an illustrated account of his researches in Verhandlungen der Berliner Anthropologischen Gesellschaft, 1899.

Stein dug five trial trenches on the mound. He started digging on the southern side of the mound at a "level about 20 feet below the top" of the mound. At the southern end of trench E behind a "wall of large-size sun-dried bricks" at a depth of 4 feet "were found close together two pots containing small fragments of human bones mixed with ashes". The larger of the two pots was 11 inches high and 14 inches across its widest part. "A third pot of coarse make, with similar contents was found partly broken amidst refuse of animal bones and pottery debris" in a cutting towards the east. Another painted pot containing human bones and ashes was also found amidst the debris adjoining another wall.

Stein concludes as follows : "These finds made it clear that burial of human remains after burning was practised by

the occupants of the site when their dwellings stood approximately on the level indicated and that the customary position chosen for such deposits was probably intermural".

From the south-western corner of a room in the SW area "was found embedded below what seems to have been the earth flooring a coarsely made pot about 9″ across where widest and as much in height. It was filled with earth containing ashes and small fragments of human bones. In the midst of this were found two small jars, similarly filled and of the same pear-like shape, with foot-stem".

Another room 14×9 feet also yielded "a large broken dish, about 18″ in diameter, turned downwards and covering a solid mass of ashes and burned human bones". Two other burial deposits also came to light from this room. One of them contained "at the bottom a thick layer of ashes and bones"

In the final summary Stein points out the following interesting features. "This examination has furnished strong support for the belief that the remains embedded in this great mound were deposited by dwellers occupying the site during a prolonged but homogeneous culture period. We have seen that walls of sun-dried bricks placed on rough stone foundations served for the habitations of the living. The remains of the dead after burning were gathered in earthen vessels and a resting place for them provided within the walls of the dwellings or the closest proximity to them".

2. **Moghul-ghundai:** This small mound, measuring about 90 yards north-south and about 75 yards at its widest

part, stands on the left bank of the river Zhob and is "a little over 9 miles to the south-west of Fort Sandeman". It rises "to a height of 22 feet above the partially cultivated ground close by". The top is "covered with the remains of rough stone walls of obviously modern origin". The mound, according to Stein, is of the same prehistoric type as that of Periano-ghundai but the "very numerous stone heaps.... strewing the bare-foot of the hill-site" is a peculiarity of Moghul-ghundai. The stone heaps proved to be burial cairns, as will be evident from their descriptions given below.

Stein dug two broad trenches "on the north and east sides of the mound from its foot towards the rough stone wall of late data which encircles the top". In the north trench at a depth of 4 feet from the top and close to the stone foundation of a mud-brick wall a large painted earthenware vessel was found "full of human bone fragments, largely calcined, including fingers, small pieces of the skull, etc.; as well as ashes".

The east trench yielded "at a depth of about 3 feet, a small human skull, broken like the bones near it" in "a small room of irregular shape" enclosed by a wall of "uncut but well-laid stone work" standing about 3 feet high. "In the SW corner of this the skull and part of the skeleton of a child were unearthed on a level of 2 feet from the surface". Stein notes the above burials to be "another kind" and ascribes "these child burials to a period very much later than that of the cinerary deposit".

Cairn burials (Mohgul-ghundai)

The cairn burials were scattered in irregular groups. Stein has divided them in two groups A and B—the former having 40 cairns and the later 56.

The first few ones did not yield anything below the stones even at a depth of 4-5 feet. The soil appeared to be undisturbed. The first find of "fragments of a broken pot of coarse earthenware and small pieces of human bones" along with a "fragment of a jaw bone retaining some teeth" came to light from cairn No. iii from about a depth of one foot. Some iron implements were also found in association.

Cairn v also yielded a coarse earthenware pot along with "the tip of an iron arrowhead, all mixed up with small fragments of human bones and a few coarse potsherds".

Among the other numerous stone enclosures almost all of them showed "a few small bone fragments together with some potsherds". But about 60 cairns did not have "a single painted piece of pottery nor a plain one of the fine prehistoric ware".

Stein concludes in the following terms the difference between the burial customs of the mound and the cairns. "From the regular association of bone fragments with potsherds it seems safe to conclude that those whose burial customs account for these cairns burned their dead and subsequently deposited a few of the bones on the ground within a rough stone enclosure along with some earthenware

vessels which may have had served at the last rites or with broken pieces of the same. But pious practice would permit occasional deposits of another kind also, and from these it is possible to determine the period from which these funeral relics date with a fair degree of assurance".

Stein finally emphasizes the total absence of pottery in these 'curious' cairns, and that they "cannot be older than the early centuries of our era, and that they indicate burial customs wholly different from those observed at the mounds of Periano-ghundai and Moghul-ghundai".

The same type of cairns comprising "eight small stone enclosures" was found "some 50 yards south-west of the foot of the Moghul-ghundai mound". They also contained fragments of human bones together with pot-sherds of the same coarse whitish ware embedded in the loose earth". Stein suspects the same type of cairns "on bare slightly raised ground about a quarter of mile to the north of Periano-ghundai and also further away to the east of it".

3. **Chaperkai hill:** Burial cairns similar to those of Moghul-ghundai described above, were also discovered in the Chaperkai hill, about 65 miles south of the mound of Moghul-ghundai. Stein describes them as follows : "close examination of three of these stone-heaps showed that the little heaps of loose earth which were found within over the bare rock of the ground, contained small remains of human bones and fragment of the same coarse and brittle whitish earthenware as found within the cairns of Moghul-ghundai".

4. **Dabar-Kot:** The mound of Dabar-Kot is conspicuous because of its great size and height. It is about 450 yards from the north to south and about 500 yards from the east to west with a circumference of about a mile. With a height of about 113 feet it looks like an isolated hill in the midst of the plain. As the crow flies it is located about 31 miles south-west of the site of Chaperkai hill mentioned above, in the district of Loralai in N. Baluchistan. The mound is about 21 miles due south of the cantonment of Loralai. There are remains of two small ruined forts on the top of the mound.

Trial trenches were cut towards the western and northern slopes of the mound. Trench *b* yielded at a depth of 2 feet from the surface "a broken pot with another smaller one inside filled with ashes and small bone fragments". Both the pots were painted with black geometrical designs.

Three more urns "containing ashes with bone fragments" were unearthed at a depth of 6 feet under the debris.

Two large unpainted jars were also found at about the above level. "They held ashes and were surrounded by small fragments of burnt bones".

5. **Tor-dherai:** It is a small rocky hillock about 2 miles north of Dabar-Kot on the left bank of the Thal river. It is mainly a Buddhist site. Potsherds with *Brahmi* and *Kharosthi* inscriptions have been found here. Four small burial cairns of the same type as those found near Moghul-ghundai, Chaperkai and Dobar-Kot were also

located here. Three of the cairns showed the presence of "small calcined fragments of human bones and potsherds of coarse whitish-faced ware".

6. **Sur-Jangal:** It is a little knoll, about 40 yards in length from east to west with a height of about 16 feet. As the crow flies it is about 12 miles northwest of Tor-dherai and 11 miles south-west of the Loralai cantonment.

About a score of low cairns were found "heaped-up with large unhewn stones after the fashion first noticed near Moghul-ghundai at a distance of "60-70 yards to the east and south-east of the mound". In all of them were unearthed "small calcined fragments of human bones lying on the natural ground together with a few potsherds"

Stein concludes from the available evidence as follows : "The chronological evidence here afforded is of interest as in conjunction with what the finds in the cairns near Moghul-ghundai show, it suggests that burial customs practised during the chalcolithic period in this region has continued into historical times".

7. **Suktagen-dor:** It is a low rocky plateau located in the middle of a bay to the south of the Dasht river in Western Makran. It is situated, as the crow flies, about 30 miles north of the sea port of Gwadar.

Suktagen-dor was brought to archaeological notice by the excavations carried out by Major Mockler in 1875. Stein's excavations in 1928 form the basis of the present account. In course of his excavations three large cinerary

urns were found from the debris accumulated at the foot of a recent wall. Stein describes them as follows: "The uppermost deposit proved to consist of two pots, one stuck in the other. The outer one had become badly crushed and could not be measured; the inner one showed a maximum diameter of 23 inches, the height as far as preserved being 15 inches. Within were found numerous small fragments of human bones, unmistakably calcined". The other contents were shell and pottery objects.

The second urn "measured 29 inches across at its widest and had a height of over 31 inches. Amidst the earth filling it, ashes and small fragments of calcined human bones were found throughout".

The third urn was about "30 inches wide in the middle". It also contained bone fragments and ashes.

Stein notes the identity of the above burial practice with those of Periano-ghundai, Moghul-ghundai and Dabar-Kot.

Sewell and Guha, who wrote on the bone remains from Makran as an Appendix to Stein's memoir (1931), found in the contents of two urns besides "bone fragments", the following animal bones:

(*a*) Lower end of humerus of a small mammal—? (*Ovis* sp.)

(*b*) A vertebra of a fish.

(*c*) Teeth of an ox (*Bos indicus?*)

8. **Shahi-Tump:** The mound of Shahi-Tump is located along the left bank of the Kej river in the village of Tump in Western Makran. As the crow flies it is about 65 miles N.E. of Suktagen-dor. The mound is 85 yards long east-west and little more north-south. It rises to a height of over 27 feet at the top.

A trench 16 feet wide was laid down the eastern foot of the mound right through its centre. It was dug to a maximum depth of 21 feet and firstly divided into seven (i-vii) sections. Section vii, having yielded a small burial ground, was extended some 34 feet westwards, thereby adding seven more sections (viii-xiv). Remains of walls built of loose stones from torrent beds were discovered in sections i-iv. Remains of another wall built of sun-dried bricks were found between sections vii and viii, both of which yielded complete burials.

Burial deposits (Shahi-Tump)

Section vi yielded at a depth of 5 feet from the surface a large painted urn, about 14 inches in diameter, containing "fragments of bones, all burnt including pieces of a sheep's or goat's jaw-bone with teeth and of the spine, mixed with ashes and earth. There was also the fragment of a glass bangle". Nearby was a large number of various types of earthenwares.

The above bone remains appear to be parcel 4 in Sewell and Guha's list. They have identified them as "Portions of a lower jaw with molar teeth of a sheep (*Ovis* sp.)".

About 3 feet south-west of the above finds and on a slightly lower level "came to light poorly preserved remains

of a human body with the legs bent at the knees and the hands jointly raised towards the chin. The body lay with the head towards the west".

Nothing has been mentioned of the above human remains by Sewell and Guha.

At approximately the same level of the above human body were also found "a large agglomeration of vessels" belonging "to another and far more elaborate burial".

Section vii revealed at a depth of about 6 feet below the top of the mound "a complete body laid with its head to the west, and at about 2 feet distance south of it a second one also laid in the direction from east to west". Stein has called the first skeleton A and the second B. Both the bodies were almost encircled by various types of earthenwares. The position of the bodies according to Stein is as follows :

"The body A was laid on its left side, with the head slightly dropped and facing north ; the arms laid one above the other and bent so that the joint hands were raised to the level of the chin ; the legs with bent knees drawn up as of a person resting on a couch. The body rested on rough water-worn stones. The other body, B, was lying on its back, with its less well preserved head turned slightly to the left proper ; with the right arm resting on the right leg which was but slightly bent, and the left arm close to the breast. Here I may note that the poorly preserved bodies subsequently unearthed in other sections also appeared to have been laid on their backs".

The Crania (Shahi-Tump)

Stein removed the skulls only of the above two skeletons and they form major part of the report by Sewell and Guha on the human remains from Makran.

Skull A was "crushed flat, the parietal bones being distorted and flattened so as to abolish almost entirely their natural curvature". According to the above authors the skull showed "a considerable degree of prognathism" but the incisor teeth of the two jaws were in "exact opposition and the upper incisors do not overlap in front of the lower". The upper part of the vertebral column was found attached to the skull. As judged "from the thickness of the cranial vault", Sewell and Guha opined the individual as "probably a male" and "undoubtedly adult". There were no indications of the closure of the cranial sutures. The teeth were "markedly eroded, the crowns of the molar teeth worn flat".

Skull B was in a better state of preservation than that of A but there was "a considerable amount of compression and distortion". The mandible was in position but showed "considerable degree of warping". The skull appeared to be dolichocranial "though not so long as the Nal cranium". Applying Wingate Todd's formula the cranial capacity was found to be 1428.5 c.c.—the auricular height being 119 mm. It thus nearly agrees with the cranial capacity of the Nal skull—it being 1442.9 c.c. (p. 6). It was a male skull in all probability. The individual was adult since all teeth had erupted and closure of the cranial sutures commenced. The following measurements of this skull are worth while giving.

Nasal height	..	54 mm.
Nasal breadth	..	23.5 mm.
Nasal index	..	43.5 (leptorrhine)
Bizygomatic breadth	..	116 (?) mm.
Nasion-prosthion length	..	81.5 mm.
Nasion-gnathion length	..	130 (?) mm.
Total facial index	..	97.4
Upper facial index	..	70.3 (hyperleptene).

Sewell and Guha conclude as follows regarding the racial affiliation :

"While agreeing with the Nal skull in the general type skull B would appear to show traces of mixed origin and in certain respects tends to approximate to the Caspian or Nordic Type of Skull".

Besides the above human remains the following also came to light at Shahi-Tump.

"Two large funerary pots containing ashes and fragments of animal bones but no human bones" were found from section viii. A "badly decayed body, apparently of a child" was also found clustered with "bowls and jars of small size". Burials deposits were also found in sections ix, xi and xiv. Two bodies were found in xiv of which one appeared to be that of a child.

Stein notes the "greatly varying levels" of the burial remains. They, according to him, "indicate their having been placed on the slopes of the mound when the latter had owing to progressive denundation already assumed a configuration not unlike the present one". The most important point

from the standpoint of burial customs is the presence of two different methods of disposal of the dead as found in sections vi and vii, where within the depth of 5-6 feet, post-cremation urns and earth burials have come to light. The latter burials of course appear from a slightly deeper level.

In course of his tour in Makran, Stein also surveyed and excavated a large number of other archaeological sites. A brief summary of those sites showing evidences of disposal of the dead is given below. Bone remains from some of these sites, majority of which is from burial cairns, were sent to Sewell and Guha for purposes of report.

9. **Take-dap:** It is a flat plateau of calcareous sandstone located on the sea coast about 30 miles south of Suktagen-dor. 32 cairns or *dambs* were found in an area 306 x 170 yards. "They are invariably formed by roughly circular heaps of stone blocks collected on the spot and rise to a height of 2 to 3 feet". The plateau is strewn by large kitchen middens, which rise to a height of "40 feet or so across".

Most of the cairns examined yielded fragments of human bones without any definite marks of calcination. The single parcel sent to Sewell and Guha from this site contained "several spines of a Sea-Urchin (*Stomopneustes variolaris* Lamarck)".

10, **Jiwanri:** This site is about 4 miles N.W. of Take-dap and also located on the sea coast. The burial carins are somewhat larger than those of Take-dap and the estimated

number is more than 200. Stein opened 178 of them in course of four days. The cairns were enclosed by walls about 3 feet high. The enclosures were "formed by building up walls with rough pieces of the hard calcareous standstone found on the spot around an earth-filled interior varying from 3 to 5 feet in diameter". The enclosures were in most cases circular but a few were quadrangular in shape also.

Very small fragments of human bones were found in the above "earth-filled interior". But large fragments of bones "readily recognised as human such as thigh bones, arm bones, knee caps, etc." were also found in numerous instances. There were no distinct evidences of calcination on the bone fragments and the vessels within the cairns showed no evidence of any ashes.

According to Stein the funeral customs of Jiwanri and Moghul-ghundai appear to be similar. He assigns to both the date of "early centuries of our era" with an earlier one for Jiwanri. The method of disposal of the dead bodies at the latter site is not clear. Stein notes : "There still remains the question to be considered as to how the bodies of the dead were disposed of at Jiwanri before remains of their bones came to be deposited within the cairns". Comparing the evidences of Moghul-ghundai and the Lak plateau, Stein concludes :

"Hence the assumption seems justified that the bodies here may have been exposed to wild animals more or less after the Zoroastrian fashion and only such remnants of the

bones as could be readily traced subsequently deposited in the cairns. Doubts may arise as to how this could be done without the provision of the orthodox *Dakhma.*"

There is no mention of the Jiwanri human remains in Sewell and Guha's report.

11. **Zangian:** It is an extensive area of low rocky hillocks covered with burial cairns. It is located about 5 miles south of Shahi-Tump. The burial cairns were found in groups along the right bank of the wide flood-bed of the river Sorab-Kaur, which rises in the nearby hills and joins the Kej river near about. Stein counted about 490 cairns in course of his three days stay. The total number of cairns probably exceeds the above number since many were "quite low and little heaps of rough stones often difficult to distinguish from the natural rock debris of the decomposed ridges over which they were scattered". Altogether 69 cairns were opened by Stein.

The shape of the cairns was similar to those found at Jiwanri. "Their walls of roughly heaped up stones usually form irregular oblongs with an approximate east to west bearing and enclose earth-filled spaces from 5 to 8 feet in length and 2½—3 feet wide". Fragments of human bones were found in the earth-filled space and majority of them had "indications of calcination by burning". Ten cairns showed earthen vessels varying from one to six in number. Two cairns (I.xx) yielded a horse's head each, none showing any signs of cremation similar to the human bones. A large

broken iron sword blade and a damaged iron weapon with a "bronze fastening at the hilt" were found in a cairn (II. viii).

Stein draws a close relationship of the Zangian remains with those of Jiwanri and Moghul-ghundai but the absence of any evidence of cremation at Jiwanri still remains to be explained. The close relationship of the ceramic ware and other artifacts may be due to their importation from the same manufacturer. There is no mention of any horse's head in Sewell and Guha's report. Probably they were not sent to them.

12. **Kulli:** The mound of Kulli is situated midway between Shahi-Tump and Nal. It is about 110 miles east of the former while Nal is situated about 107 miles to the north-east. The mound is about 400 yards long from north to south, with a maximum width of about 330 yards and is 30 feet high. Evidences of old buildings and small fortifications were present on the mound.

Two groups of "small cairns in the shape of stone circles" were found towards the northern portion of the mound. Four of them were opened by Stein. He found "within the circles loose earth and, mixed with this, small fragments of calcined bones, some ashes and pieces of plain pottery".

A human body was found from inside a room "at a depth of 4 feet from the present surface level". The head was badly damaged during excavation but it "lay approxi-

mately towards the north. The knees were drawn up and the arms bent towards the head". Stein thinks that the burial "must have taken place when debris had already accumulated to a considerable height around the building".

The human remains from Kulli were not probably sent to Sewell and Guha.

13. **Gwarjak:** This little village on the right bank of lower reaches of the river Mashkai yielded a "large coarsely made jar, apparently hand-made" containing "small calcined fragments of human bones and ashes, also two charred date-stones probably meant to represent a funerary provision of food". Fragments of calcined human bones were also found from two other cairns, one of which yielded a small fragment of copper from a pot.

Stein concludes that the burial customs observed at Gwarjak correspond "partly to those followed at the chalcolithic sites of Zhob and Suktagen-dor and partly to those noted at the later cemeteries of Jiwanri, Zangian and elsewhere in the Kej valley".

14. **Nokjo Shahdinzai:** This mound is also situated in the Mashkai valley. It is about 36 feet high and measures 300 yards north-south. There is a ruined fort at the top of the mound.

"Roughly formed stone enclosures", measuring approximately 5×4 feet, were found below the south-eastern foot of the mound. One of them yielded "below only 5 to 6 inches of earth part of skull, apparently of a child with other

bone fragments" accompanied by pottery-wares. A few bone fragments were found in another enclosure nearby.

There is no mention regarding the calcination of the bones. Stein however notes the similarity of the above burial deposits with those of Jiwaṇri, Zangian, etc.

15. **Mehi:** The mound of Mehi is also situated in the Mashkai valley and is only 6 miles north of Nokjo Shahdinzai. As the crow flies, Nal is situated about 35 miles to the north-east. The mound is about 360 yards long in the N.E.-S.W. direction; its maximum width in the opposite direction being 330 yards. It rises to a height of 50 feet above the field level. The mound is full of masonry structures built of stones, brought from the precipitious cliffs of the Mehi hill.

Stein drove four trenches on the mound. In trench I.9 "large fragments of calcined human bones were covered with a large broken bowl, and amidst them lay the small painted jar, broken in antiquity and containing earth mixed with ashes".

In I. 4 was found "a large urn, filled with earth, bone fragments and ashes".

In I. 8*a* a large pot was found at a depth of 4 feet containing "six skulls in a heap over calcined bones. The skulls were all small, some looking like those of children; yet some of the mixed bones cleared were manifestly those of adults".

In trench III. 5 a cinerary urn (height—15½ inches, width—18 inches and 13 inches across mouth) was discovered containing calcined human bones.

Trench III. 6 yielded a partially burnt broken skull "amidst ashes and fragments of charred wood with which were mixed small bone fragments".

A large urn (height—22 inches, width—24 inches and 18½ inches across mouth) came to light from trench III. 10, at a depth of 1½ feet of earth. It contained near the bottom a cremated and broken skull. Another small urn from this trench, found at a depth of one foot, showed fragments of a child's skull along with ashes.

Sewell and Guha found no human bones in the parcel containing bone remains from Mehi.

16. **Gatti:** It is a small hamlet near the sea-port of Gwadar. Six stone circles were examined. "Majority were found to contain in the centre a few bone fragments, apparently human and unburnt".

17. **Near Nasirabad:** At a distance of 1 to 1¼ miles from the village of Nasirabad, situated on the wide stony *Dasht* stretching from the hill range of the Kej-band, 72 small burial cairns of the same type as those described at Jiwanri were counted. "Small fragments of bones, apparently human" were found in all the cairns opened. Stein points out "the identity of the burial customs at this site with those observed at Jiwanri and Moghul-ghundai".

Fragments of iron implements were recovered from one of the cairns.

18. **Abdul-but:** It is a rocky ridge about 20 feet high located on the bed of the Tuk river. Traces of rough stone wall were observed on the top. One stone circle, out of the several small ones present, was opened. It contained small fragments of burnt bones.

Commenting on the burial customs of Mehi, Stein made the following observation: "The practice of placing ashes and remains of bones from completely cremated bodies in cinerary vessels is identical with that observed at the chalcolithic sites of Zhob and Suktagen-dor. On the other hand the custom of leaving remains of partially burned corpses deposited together with personal relics at the places of cremation differs from that practice and may well mark a step towards complete interment such as is found at the later burials on the top of Shahi-Tump mound and at the burial ground explored by Mr. Hargreaves at Nal".

Stein's first point of differentiation is between "complete" and "partial" cremation. The latter practice then, according to him, precedes "complete interment". But there is now probably enough archaeological evidence of cremation being a much later practice than complete interment. The Cemetery H of Harappa proves it very well. Complete interment also appears to be more in vogue in primitive societies than that of cremation. Partial cremation is also in vogue among the low castes of Bengal. It appears to be

due to either shortage of fuel or of men attending the funeral. Both are dependent upon the economic condition of the deceased. It may as well be the lingerings of the old traditions of exposure and burial, and probably, the custom of cremation has not been rigidly accepted. The above people also follow the practice of burial for children and for unnatural deaths. Here too deep burials are not always made as a result of which dogs and jackals soon dig the body out and scatter the bones in course of their meals. This scattering of bones may eventually be the sources of the so-called 'fractional burials' of archaeological sites.

The main custom is either cremation or burial. Its partial or complete nature appears to be due to the exigencies of circumstances, on which no hard and fast differentiation can be made. Stein has in the majority of sites found fragmentary bones except at Jiwanri, where bone fragments were large enough to be identified, and they did not show definite marks of burning. Unburnt bones have also been found at other sites, namely Gatti, Take-dap, etc. At Jiwanri, Stein probably doubts the process of exposure of the dead bodies because of the absence of any evidence of a *dakhma* (Parsi Tower of Silence). But it will be evident from the following quotation from Jackson (1906) that poor Zoroastrians did not always require a *dakhma* for exposing the corpses. Jackson writes: "If, in Persia, a Zoroastrian community is too small to support a *dakhma*, the body is carried to some remote place in the hills or

mountains, is then covered piled around with stones and covered with a slab, but not interred".

It is not unlikely that Stein came across such burials under the stone heaps found by him. It is suspected at Jiwanri and in the cairn burials of Moghul-ghundai, Chaperkai hill, etc.

The mixture of burnt and unburnt bones has long been a problem in archaeology. Weninger (1954) pointed out its presence in Sweden, in North and Central Germany, and in England during the Bronze Age. Schaeuble (1958) reported the presence of such a mixture in an urn found at Osmankayasi in Boghaz-kui. As such a careful survey of the bone fragments is necessary.

Further the colour of the bones due to calcination appears to be variable as noted by Schaeuble in course of his study of the Osmankayasi human remains. He noted the following four colours :—

1. Whitish grey (weissgraue),
2. Yellowish grey (gelbgraue),
3. Dark blue (stahlblaue),
4. Earth brown (erdigbraun).

These colours are worth while noting when calcined bones are found.

Stein has rarely mentioned the presence of charcoal along with the ashes or with the bones. Fragments of charred wood were found in trench III. 6 at Mehi (p. 41).

The same was also the case with the Osmankayasi remains and Schaeuble conjectures that they were picked up from the place of cremation and deposited in urns.

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HARAPPA

Harappa is located in the district of Montgomery in Panjab, W. Pakistan. The nearest Railway Station is Harappa Road, on the Lahore Multan branch. The mounds are located about 4 miles north-east of the above Railway Station.

Cemetery and the Excavations

Of all the cemeteries associated with the Indus Valley civilization that of Harappa is the most interesting. The Cemetery at Harappa was discovered in 1928 on the flat plain area towards the south of the mounds. It was excavated in three sections during the above year and in the next three years. It has been called Cemetery H. During 1938 another cemetery, called R. 37, was discovered 250 feet south of the Eastern Section of Cemetery H. A detailed report of R. 37 has not yet been published and as such nothing is known of the details of the 47 graves found
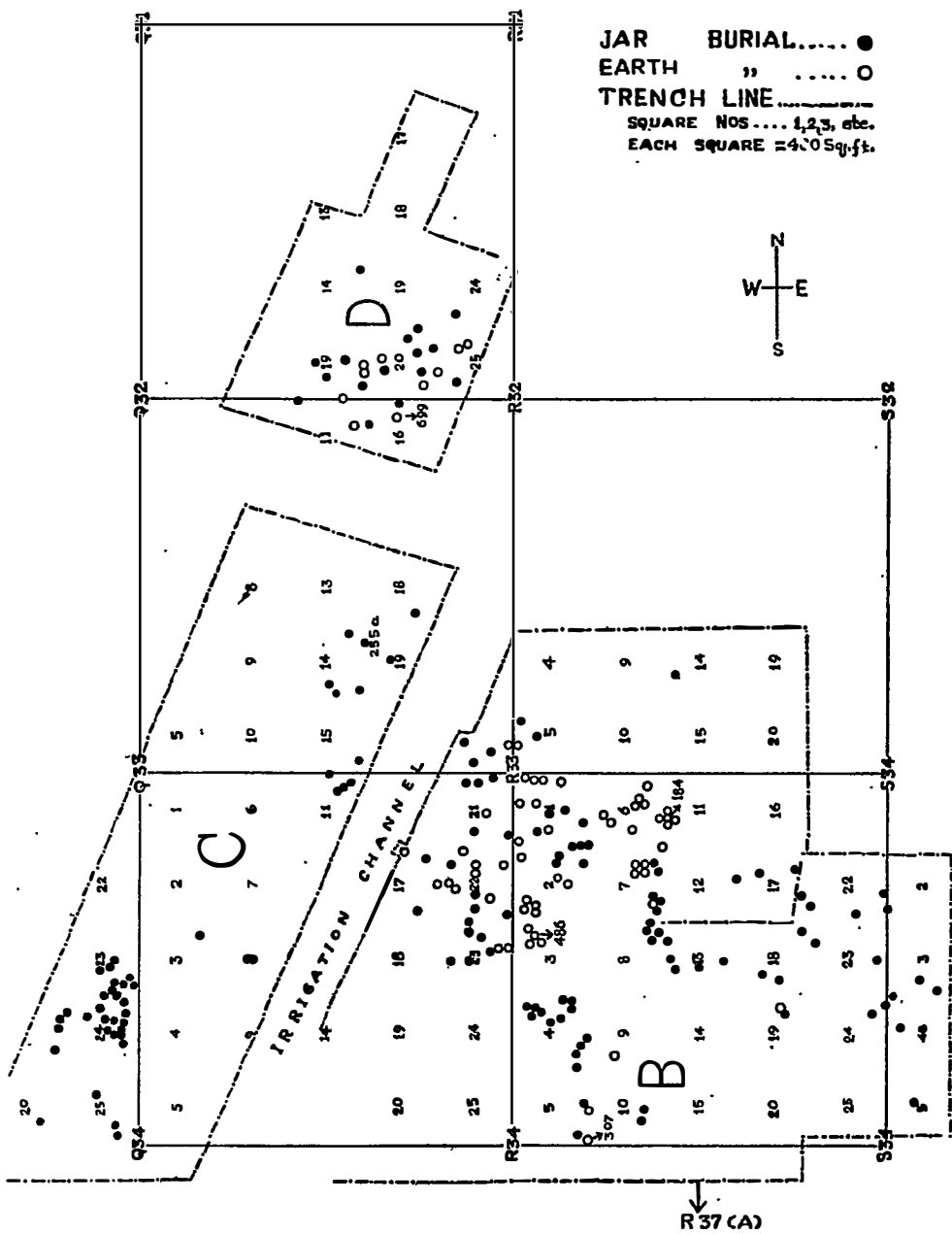
Fig. 1.
Cemetery H showing different excavated areas.

[To face p. 47

between 1937-41. Gupta, Basu and Datta (1963) in their recent report on the skeletal remains from Harappa have however given brief list of the skeletal materials found in this area. Wheeler (1947) tried to establish the stratigraphic sequence between cemeteries R. 37 and H. He found 3 pot-burials and 10 graves characteristic of the latter and the former respectively.

Cemetery H, in all its three sections (Fig. 1), covering a total area of 3,800 square yards, was excavated by Vats (1940). It lies towards the east and west of an irrigation channel, and a third area to the north of the above western portion was also dug during 1930-31 season. The area of each of the above Sections, according to Vats, is given below :—

1. East of irrigation channel (B)—trench measuring 145 feet, north-south, and 140 feet, east-west, dug to an average depth of 5 feet 6 inches.
2. West of irrigation channel (C)—trench measuring 185 feet, north-south and 55 feet east-west, dug to an average depth of 6 feet 6 inches.
3. North of Section 1 above (D)—trench measuring 61 feet north-south and 65 feet east-west, dug to an average depth of 5 feet.

A tongue, measuring 78×37 feet, from the northern section (D) was dug up to a depth of 15 feet. This deep digging yielded at a depth of 7 feet 9 inches a bed of riverine silt and then below it "a four feet thick layer of rubbish

consisting of foundation nodules, potsherds, brick-bats and ashes" (Vats, 1940, p. 232).

For the sake of brevity we will here call the above three sections B, G, and D respectively. Cemetery R. 37 will similarly be called A.

Stratigraphy

Area B, which was discovered first of all, has yielded two layers of burials. The first layer, which was found within a depth of 3 feet from the surface comprised jar-burials. The burial jars varied between the maximum height of 23½ inches and the minimum of 8 inches. The second layer was found within a depth of 6 feet from the surface and yielded skeletons. They have been called earth burials by Vats and the same term has been used here also. The earth burials were sometimes accompanied by a large number of burial pottery and fragments of animal bones. In one instance (H. 698) a complete animal, either a sheep or a goat, was found sacrified by the side of the dead man. The body was in the majority of cases extended full length but five instances are known where it was flexed at the hip and at the knee. The head was oriented to the north-east in the majority of cases.

No debris were found between the above two layers. As such the contemporary nature of the burials from the above two layers has been discussed by Vats. He writes : "Now, as sherds typical of burial pottery of strata I and II were, in many cases, found mixed up together on the mounds,

it is unlikely that the two strata were separated from each other by any very great length of time, and the fact that in the Cemetery itself there is not much debris between them lends further support to this view. Further, in so far as earth-burials must be inhumed at a safely low level, the mere fact that pot-burials lay above them or at a higher level would not necessarily indicate an earlier date for the former ; indeed it is quite conceivable that the two strata, which are not separated by any structural remains, may be more or less contemporary". In spite of the above remarks Vats has throughout his report used stratum I and II to distinguish the two different burials. Vats also explained the difference in the burial customs of the two strata by a sudden change in burial customs "brought about by the immigration of a foreign people into this district of the Panjab".

As will be discussed hereafter it is rather difficult to envisage such a quick change in burial customs. And Vats has not mentioned any of the contemporaneous burials. They are successive in nature in the majority of cases—only one or two jars appear to have slipped off from the original position, as seen in area D. Wheeler (1947) has also found in course of his excavations two strata of burials.

As already mentioned, details of cemetery R. 37, herein called A, are still unknown. Wheeler in 1946 sought to link up the areas A and B stratigraphically. Plate XV of his report, shows that a parallel trench was dug along the eastern side of area B and then connected with area A by another

longer trench driven in a south-western angle. The total length of this trench, as worked out from the above report, appears to be about 145 feet. In this trench three jar-burials, characteristic of stratum I of area B, were found towards the northern end of the trench and 10 earth burials towards southern end. One of the jars was found at a depth of 1½ feet below surface and the other two at 2½ feet. They thus nearly agree with the depth of stratum I of area B.

The depths of all the ten earth burials (Wheeler, 1947) are not known. It could however be worked out in the case of graves I, II, III, V, VII and VIII from the section (Pl. XXXIX), the depths below surface being 1½, 1½, 1¼, 4½, 1 and 2 feet respectively. The depths of graves I and V are given in the text as well.

The above comparative figures of depths of the two types of burials probably show that they are nearly contemporaneous with one another, but they are from different areas as mentioned above. Wheeler has described the stratigraphy of this area as follows: "The deposit containing the graves slopes downwards towards the north and east to form a large sunken area which was gradually levelled by the subsequent deposits. The first of these 1-2½ feet thick, covers the grave-layer and underlies a dense mass of potsherds and other debris, ranging up to 7½ feet in height and constituting the main filling of the sunken area. Towards the northern part of the trench, this

infilling is covered by a further 2 feet of debris mixed with clay, and in this further layer were found two pot-burials of Cemetery H I type".

Vats also described the debris as follows: "A common feature of the debris in the Cemetery Area was that the whole of the Western Section and the western and eastern parts of the Eastern Section were littered with a thick layer of countless potsherds far outnumbering any that have yet been found at any one place at Harappa". It was in this eastern part of the eastern section that Wheeler laid the trench. A four feet thick layer of rubbish below a bed of riverine silt at a depth of 7 feet 9 inches has already been mentioned.

The depth of the jar-burials and the graves excavated by Wheeler appears to vary within the maximum depth of 4½ feet in both the cases, and bespeaks very much regarding the contemporary nature of the two types of burials in the two areas, excepting of course in the case of grave V, which may be assigned an earlier strata than the jar-burial and is probably typical of stratum II of area B. The other burials (graves I, II, III, VII and VIII) appear more towards the southern end, i.e., in area A, while grave V is situated about 20 feet north of the above group of graves. Since nothing is known of the depth of the graves of area A it is difficult to compare their stratigraphy with those dug by Wheeler. He did not find any material similar to that of stratum II of area B from his trench laid to the east of the latter. It appears that stratum I of area B ceased

to occur southwards whereas the earth burials of stratum II are continued in the above direction.

The contemporary nature of the graves of area A and of the II stratum of area B is also supported by the method of burial and the accompanying burial pottery. The absence of jar-burials in area A and of the earth burials in area C may be ascribed to similar causes. There is some indication from Figure 1 that the majority of the earth burials is localised and spread out in an almost north-south direction, whereas the jar-burials are distributed in an east-west manner over a much larger area. It is also apparent from the above figure, and particularly from areas C and D, that the jar-burials were probably aligned in some groups or divisions.

In the present state of our knowledge we do not know either the beginning or the end of the Cemetery at Harappa. But for the irrigation channel areas B and C appear to merge into one another in respect of jar-burials and the same might be said for stratum I of area D. Jar-burials therefore appear to be some what linked up with the different areas.

The same might be expected of the earth burials, if further research does not show beyond any doubt the earlier stratigraphy of the graves from area A in comparison to those from stratum II of area B. The similarity of the burial customs in the two areas indicates their coeval nature.

Area C yielded only jar-burials typical of stratum I of the two areas B and D. Similarly area A showed only earth burials typical of stratum II of the areas B and D.

Area D requires some special consideration in view of the fragmentary nature of the burials of stratum II. In this area not a single complete skeleton was found. Vats has called them 'fractional' burials. The difference in depth between the two strata of burials has been stated to be lesser than that found in area B. It has not been mentioned in figures but from Plate XLIX of Vats (1940) the difference does not appear to be appreciably different from that found between the two strata in area B.

The incomplete burials of this area are difficult to explain. According to Vats: "....not only a marked change had taken place in the character of funeral pottery but more important still was the unexpected change from complete to fractional burials, which were rare in the Eastern Section. But whether this change from complete to fractional burials, with the simplification of pottery forms, marked an intermediate stage between the fractional burials of the Eastern Section and the post-exposure pot-burials of stratum I is open to question. That the fractional burials of stratum II had undergone previous exposure seems to me highly probable, since otherwise many of them could hardly have been so fragmentary; in any case they were invariably inhumed directly in the earth, in contrast with the later burials of stratum I which were inhumed in pots".

Vats has published only one photograph of such an incomplete burial, that of H.699, which appears to have been buried once for all and not the result of second interment. Further there is nothing to warrant the assumption of the process of exposure before the earth burials of the D area were inhumed.

A few incomplete burials have also been found in the second stratum of area B. Two of them, H.184 and H.307, have been figured in Plate LII by Vats. The marginal position of the above burials will be seen in Figure 1. Recently, Gupta *et al* (1962) have published an identification list of the bones of the skeleton Nos. H.184K, H.307a, and H.699. The first skeleton is represented by almost all the long bones of the body besides such small bones as carpals, tarsals, phalanges, etc. Mention has already been made of H.699 which shows an almost complete loss of the lower part of the body but the upper part including the hands is placed in a well-lain manner. The position of the head is somewhat peculiar. Was it decapitated? The above facts do not support a previous process of exposure before the earth burials. H.307a was meagrely represented by the bone remains. At the very first sight they appear to be mutilated bodies and this mutilation might be the result of some feuds or battles. Their marginal position in II stratum of area B and an isolated one in the same stratum of area D is also significant.

The question of feuds and battles brings us to another area known as G. This area is located about 690 yards

south-east of area B. It was possibly used as a dumping ground for human and animal bones, potsherds, etc. Vats sunk three trenches in this area, of which trench II yielded 23 human skulls along with other bones of the skeleton. This trench was dug to an average depth of 7 feet below surface and two strata were also found. Stratum I, found in the other two trenches, was absent in this trench. Stratum II was found between the depths of 3 feet and 6 feet, whereas the III occurred below 7 feet. Of the 23 crania, 20 were found in stratum II and 3 in III. It is rather difficult to think that at Harappa where the Cemetery shows so much concern for the dead, human bodies would be thrown into a dump, unless they belonged to some foreign people whose burial customs the then Harappans would never follow. Stratigraphically stratum II of the trench II of area G may also be equated with stratum II of area B, though the human skeletons in a refuse area may be found at uncertain depths.

Burial Customs

We may now try to form an idea of the burial usages from the various areas of the cemetery at Harappa.

To begin with the jar-burials. The burial jars varied between 8 inches and 23½ inches in height and the diameter at the mouth between 6½ inches and 9¼ inches. These measurements of the burial jars prevent any supposition of their containing adult whole human bodies. They were first of all exposed in some receptacle to birds

and beasts. That a receptacle of some form was used is probable, firstly, for purposes of identification in cases of simultaneous deaths of more than one person, and secondly, in the manner in which small bones like carpals, phalanges have been found along with the skeleton (cf. Table, Vats, 1941, p.242). The above table shows the presence of bones of more than one individual in the same jar. This appears to have been caused by birds and beasts carrying a bone or so from one receptacle to another in course of their feast. This was found in jar-burial Nos. H.154a, H.246e and H.255a. In the last two instances the second individual was represented by fragments of sacrum while in the first case the intrusive bones were metatarsals. These bones could easily be carried by birds or beasts.

Six jars were found to contain remains of infants along with adults. All these are probably cases of simultaneous deaths of mothers and their infants. Of the six crania, the sex of three, H.245a, H.247a and H.154a is known. The last two have been identified by Gupta *et al** as females while the first as a juvenile. H.245a was recorded in the present writer's field notes as a female with a query, about 18-20 years old. It appears to be a female and a mother now. Thus in all probability the other three skeletons H.149, H.62d and H.167, which were accompanied by infant bones, belonged to females. Children of all ages were

*** In this report only some well preserved crania have been taken into consideration. The sex of the majority of the individuals from jar-burials is still unknown. (Cf. Appx. I).**

probably exposed before their burial in jars, as in H.231 (b), which was associated with a tibia of another young child and a fragment of adult human bone, two long bones of some bird, four steatite stars and two ivory objects ; in H.206(a) aged between 12-14 years, in H.342(a) represented by the fragment of a child's skull only and, in H.245(d) associated with the skeletal remains of two rodents.

It is unlikely that the new borns dying soon after birth or still births were exposed similar to the adults, since they could be easily carried away by birds and beasts. They were buried in jars of a special type after the body was wrapped with some covering and laid in embryonic position. Eleven such jars have been found from stratum I of area B.

It appears from the bone contents of the burial-jars that efforts were not made to put any typical bones, such as the skull or the bones of the leg or the arm. Once exposed to animals the question of typical bones could not probably arise. But two variations in the adult burial from the procedure described above appear to be present : (a) when jars were found without any bones whatsoever, only filled with brick-bats, percolated earth, etc., and, (b) jars with fragmentary remains of bones, as in H.206g, where only a scapula is seen, in H.245d with only seven bits of bones, and in H.342a with only a fragment of the skull.

Vats has mentioned 51 jars of type (a) out of 124 jars excavated from stratum I of area B. This comes to a high percentage of 41 which is likely to be higher if only

adults are taken into consideration. The 124 jar-burials*, according to Vats, comprise, 35 adults, 21 children, 6 unknown, 11 infants and 51 without any bones. The number of adults then is much lower than those buried without any bones.

A few questions thereby crop up here. Why so many empty or nearly empty jars were buried along with those containing bones? Was exposure also practised in these cases? Since charcoal and charred bones were found in a few cases were they post-cremation urns as found in the habitation areas? Vats (1940) has given a list (pp. 254-271) of 176 post-cremation urns from the three mounds AB, D and F with 41, 15, and 120 urns respectively. Some of these urns contain clear evidences of human bones, as in Serial No. 11 from F mound with a human tibia, Serial No. 32 with probably a human tooth, and Serial No. 89 with some long bones, vertebrae, etc., a few of them charred. Charred bones have also been found from jars H. 154b and H. 152c from stratum I of area B. It is probable that stratum I of the above area also contained some post-cremation urns besides the post-exposure jar-burials containing skeletons. Since there is no definite information about the contents of the jars it is difficult to calculate the frequency of the two methods of the disposal of dead at Harappa. The height of

* The total number of jar-burials appears to be 136 according to the present author. 85 from Eastern Section (B), 37 from Western Section (C), 14 from Extension of Western Section (D). Since the contents of the jars are not known in all cases no division into adults and children could be made.

the post-cremation urns from the mounds varied between the maximum of 37 inches and the minimum of 13 inches compared with 23½ inches and 8 inches respectively from stratum I of area B. The mound jars thus appear to be somewhat larger in size than those of the cemetery.

The peculiar sex ratio of the skeletal remains from stratum I of Cemetery H, compared with that of the other areas is difficult to explain. There is an abnormally high number of women in it, as will be evident from the following table constructed from the Harappa report (Gupta *et al*).

TABLE 3

Sex Ratio of the skeletons from the different Sites of Harappa.

Site	*Male*	*Female*	*Child*	*Total*
R.37	16	20	—	36
H.I	3	14	1	18
H.II	7	6	—	13
G	7	3	5	15
	33	43	6	82

Babies buried in embryonic position have not been taken into consideration here since they are not relevant in our present discussion. Some children, e.g., H.231(a), H.231(b), H.245(d), who were probably older than the new borns, have also been omitted from the purview of the Harappa report (Gupta *et al*).

Culturally, therefore stratum I of the area B shows side by side two methods of disposal of the adult dead, cremation and post-exposure jar-burials. Cremation might have been the prevailing custom. The overwhelming number of females among jar-burials, some of which are accompanied by infants (unborn babies ?) indicates probably an adult variant of the custom of cremation, resorted to in cases of abornmal or unnatural deaths of women. In the latter cases, the practices meant for children were probably followed.

Wheeler seems to ignore the post-cremation urn burials from both Harappa and Mohenjodaro. But how to explain 176 urns from the mound area and the 51 jars from stratum I of area B mentioned above ?

The other form of the disposal of the dead, as seen in the II stratum of area B and in area A, was just inhumation of the dead body with or without burial pottery and animal bones. Nothing however is known of the method of disposal of the dead infants and young children, who were treated almost in the same manner as the adults in stratum I. Gupta *et al* (1962) have estimated the ages of 3 skeletons from Stratum II of area B. They are H.485, H.503 II and H.704. The first has been described as "juvenile ; 12-14 years ; female" ; the second as "child, about 6-12 years" and the third "about 12 years". Age estimation of children from incomplete bones and in the absence of teeth is a difficult procedure. In the first case 14 mandibular teeth

were found in tact and the real age may be above 12-14 years. Nothing is known of the dental peculiarities of the other two. H.503 II had probably no evidence of crania, and, only the left parietal bone is mentioned for H.704. The evidence of the above three being children is therefore slender. They are probably juveniles similar to H.485.

Even if the age estimated by Gupta *et al* is taken for granted we do not know the methods of disposal of children below 12 years of age. No children are reported from area A—the lowest age estimated by the above authors is 17-21 years for H.810.

Contrary to the above evidences of child burial in strata I and II of area B we find 6 child skeletons from area G. Gupta *et al* estimate on cranial evidence ages of 5 of them, as varying between 2-9 years. They are again a variation from the child burial customs, known in case of stratum I but unknown in case of stratum II of B area. This supports our earlier presumption of the alien nature of the peoples of area G.

To the incomplete (fractional of Vats) burials of Stratum II in areas B and D now. First of all, as will be evident from our previous discussion these burials do not appear to be a usage in view of the methodical burials already described.

It is possibly a departure from the normal custom due to the exigencies of circumstances. Its low frequency in comparison to the complete burials also supports its abnormal

nature. Had the skeleton H:699 been exposed before its burial, the body could not have been found in the symmetrical position in respect of the upper torso and the hands. Mention has already been made of their marginal position in the cemeteries. Further researches may reveal whether they indicate the abandoning of the cemetery.

A few words are necessary here because of the mention of the multiple and fractional burials in area A (R. 37) by Gupta *et al.* They have reported 47 burials, (excluding 10 excavated by Wheeler in 1946) of which "15 were complete, 4 multiple and 15 fractional comprising collections of dismembered bones". The report here however suffers from a large number of inaccuracies. First of all, there may not be 47 burials, since Serial numbers 5 and 6 read almost the same for the same burial H.791 (probably a printing mistake). Then Serial numbers 15, 16 and 17 (H.796, H.796A and H.796B) have been reported by the authors as "could form a single burial". But in their catalogue of human remains, H.796 has been identified as a female on the evidence of "typical vertebrae 2, disintegrated left hip bone, shaft fragments of femora, shaft of left tibia". The other two skeletons have been sexed as males although the bones of H.796A have been "treated as a part of H.796", which is sexed as a female. H.796A alone has been sexed on cranial evidence. The above three were in all probability a single skeleton, as also mentioned by the authors on page 19 of their report. It is difficult to understand why on the evidence of skeletal remains the number of individuals could

not be correctly determined. Probably it is less difficult than to estimate the age or sex of the skeleton from fragmentary bones, as done by the authors in the cases of H.795, H.802 (iii), H.804, etc. For instance, the last skeleton has been sexed as male on the evidence of "proximal 2/3 of right femur" and "shaft of radius". Then there is an anomalous remark, "no bones found", which has been repeated at least 8 times. For instance: "Burial No. H.795/B: No bones found: treated as part of H.795A". If no bones were found, how could they be treated as part of a skeleton?

Gupta *et al* mentions 108 individuals from 57 graves including 10 from 10 graves excavated by Wheeler in 1946. As such we have to account for 47 graves which should normally show 47 skulls. From the crania referred to by the above authors on pp. 18-20 of their report, we find 49 skulls. This increased to 61 as per Appendix (pp. 183-186, Sl. No. 1-96) excluding one mentioned under the unnumbered skeleton (Sl. No. 99). Three such unnumbered skeletons have been mentioned, which is obviously due to some serious lapse somewhere. The increase in the number of crania from 49 in one instance to 61 in another is obviously due to different fragments of the same skull. This is also indicative of a wholesale mix-up of the skeletal remains either in the field or in the laboratory. But 49 skulls from 47 graves show a rather close approximation—the increase of 2 being due to fragments of the same skull. It is doubtful that there was any fractional burial in area A. The close burials of the different dead bodies have probably led to the

assumption of multiple burials, for which the evidence is slender. Much however could have been suggested if some photographs were available.

Vats (1940) has mentioned in a footnote (p. 200) of his report some references of the human remains from Area A. He did not mention the burial group H.779 *a—f* as a multiple burial as mentioned Gupta *et al.* According to Vats, all but one body were "fractional and mutilated". It is difficult to understand on what basis the above authors called this group a multiple burial. They have mentioned 5 skulls in this group (p. 18) but listed 6 crania in the Appendix (p. 183). Nothing is known of the bones of H. 783, which have been shown jointly with H. 779 by Gupta *et al* under Serial No. 1. Vats has also described four skeletons associated with some ornaments. They are as follows :

(a) H.793 and H.694—had necklaces of thick steatite beads.

(b) H.804 —had conchshell armlet and anklets.

(c) H.808 —had short barrel beads of gold and carnelian.

Gupta *et al* have identified (a) as males, while (c) as a female. Regarding (b) it has been described on p. 19 as a "complete burial ; North South orientation, laid on right side ; head facing west ; only part of a skull survived". On p. 185 there are two entries for this skeleton (Sls. 68 & 69),

and once it is called female and once male. With the armlet on the hand and the anklet on the foot it is more likely to be a female than a male.

In the face of the above imperfect nature of data it is difficult to say anything definite regarding the burial customs of area A. It appears that all were earth burials similar to those found in stratum II of area B. It is worth while mentioning here, as described by Gupta *et al*, that even the fragmentary remains were in many cases laid supine and in north-south orientation as in the majority of complete burials.

References

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2. Vats, M. S. 1940. Excavations at Harappa, Calcutta.
3. Wheeler, R. E. M. 1947. Harappa, 1946: The Defences and Cemetery R. 37, *Anc. India*, 3,58-130.

CHAPTER 6

DISPOSAL OF THE DEAD

The above cultural trait has been described at the end of each of the previous chapters. An attempt is made here to present a generalized account as a whole in order to examine the inter-relationships of the various customs met with before. They could not be done stratigraphically except at Harappa and at Nal to a certain extent. It is difficult as well to say from stratigraphic evidence as to which custom is earlier and which later, unless there is a wide gap between the two strata. On the other hand different customs might be practised simultaneously among the same people. Thus for example, among the Mālé of the Rajmahal Hills three different customs of the disposal of the dead are in vogue. The present usual custom is the burial of the dead in a cemetery. The dead is laid supine, with the head normally to the north in a trench dug to a depth of about 3 feet. Before the body is laid in the trench

dry leaves and twigs are placed. If one can afford, wooden planks are placed on the dry leaves and twigs, and also on all the sides of the body in the shape of a coffin. All the personal belongings like umbrella, bamboo walking stick, flute, sickle, scythe, etc., are given along with the dead. Then another wooden plank covering the entire body is placed. After sprinkling some maize rice on it the trench is covered with earth. The entire length of the grave is then covered with large boulders collected from the hill slopes. A pitcher of water is usually brought to soften the earth before digging the trench. It is then broken upon the boulders along with the dead man's cot. In the case of dignitaries, like the *Sardar* or the *Manjhi,* a small thatch house is erected upon the grave.

This is the usual Mālé custom of disposal of the dead. But persons dying of small pox, a great scourge of these hill-men, are just left in the jungle. The same is the method of disposal of the body of the soothe-sayer (*demano*) This, unlike the exposure of corpses practised in stratum I of the Cemetery H at Harappa, is a permanent process. It appears from the evidences of the aboriginal customs of India and Africa that exposure, once for all, is probably the oldest and the simplest custom of the disposal of the dead. At Harappa the exposure of the dead was a temporary affair, since the bones of the exposed bodies were later collected and deposited in jars. This secondary process after exposure has hardly any parallel among the aborigines of India or Africa. Only the Parsis of India follow the

practice of exposure of the dead, but the collected bones are not interred in a jar. They are thrown into water. Then even among the Zoroastrians there is a variant custom, as mentioned on page 43. On the other hand other methods of the secondary disposal among the various tribes of Africa (Seligman, 1957) are known. In India the Oraon of Chota Nagpur (Roy, 1928) annually collect the bones from the graves and deposit them in the clan ossuary. It is known as the *harbora* ceremony among them. Seligman points out that this digging-up of the bones after the lapse of some time is due to the "rather widely spread belief that the reproductive energy and prosperity of the people is in some way associated" with it. The post-exposure jar-burials of Harappa therefore appear to be rather a unique custom, though its similarity with the post-cremation urns is obvious.

The Mālé are a predominantly hill-people. Their villages are located at altitudes varying between 250 and 1000 feet. Those living on the lower slopes have chances of coming in contact with the Santal and the Hindus of the plains more than those living on higher altitudes. This is true of the south-eastern region of the Rajmahal Hills. They have thus formed another ecological unit, which has been called Plains Mālé by the present writer (1934-35). They have adopted the cremation of the dead, which is performed by the side of some stream. Thus the above three practices are followed in parallel among the Mālé.

Ancient cemeteries may also provide evidences of parallel customs, as could be seen in stratum I of Cemetery H at Harappa, where post-cremation urns and jar-burials occur side by side. The human remains from G site at Harappa cannot be attributed to any custom. And the same may be said for the Chanhudaro skull and the isolated crania found at Mohenjodaro. There is however an African custom of storing the skull in a storage jar after the bones of the skeleton have been exhumed (Seligman, 1957). At Jericho the skulls were objects of veneration and Kenyon (1957) rightly points out a "cult of skulls". There is hardly any evidence of such a nature in the Indus valley.

An analysis of the burial rites from the Indus valley cemeteries and sites shows the presence of three main customs ; (1) exposure of the dead, (2) earth burials, and (3) cremation. The first and the last practices were followed by the secondary process of interment in jars. Earth burials in view of its final nature do not show much variation except in the posture of the body. Orientation could not be rigidly followed by primitive man. Whether the above disposal be among the dwellings or in the cemetery the central motive was probably the same as very aptly described by Clark (1959): "The ancient, like the modern primitives, were as collective in death as in life". This is apparent at Harappa and other sites, already mentioned in the previous chapters. At Mohenjodaro although collective cemeteries have not been found the central idea appears to have been collective. The burials were amid the dwellings, be it floor

or court-yard or bye-lanes. They thus appear to be similar to those found at Merimde, El Omari, etc., in Egypt (Childe, 1954). An analogy may also be drawn with the Vedda burials on the floor of their caves. At Nal almost all the burials appeared from among the dwellings. Stein calls the urn burials of Periano-ghundai 'intermural'.

The idea behind the dwelling burials is probably the belief regarding the dead. It may also be associated with the sedentary village life. The dead was not feared but treated as part and parcel of the household and the village. The same idea probably prevailed in exhuming the dead body after the lapse of some time after burial and preserving a part of it as an object of veneration or as a personal ornament, as among the Andamanese (Radcliffe-Brown, 1912). But when the hut or the cave or the settlement is abandoned or pulled down after a burial within, the primitive man equally suffers from a fear of the dead. The collective cemetery may have its origin here. Thus the primitive man appears to have been affected by both the ideas of good and evil will of the dead. The enormous variation in the disposal of the dead among the different aboriginal societies of India and Africa appears to rest on this duality of ideas.

Crooke (1955) in his masterly contribution on the disposal of the dead in India in the *Encyclopaedia of Religion and Ethics* has also pointed out the friendly and malignant nature of the spirits of the dead. He writes :

"The souls of the family dead, unless they are irritated by neglect, are generally benevolent; the souls of the strangers are as a rule, malevolent and hostile".

A cemetery, as is seen among the present day aborigines and also among the Hindus, is an awe-inspiring place.

Stratum I of the Cemetery H is also a collective cemetery like that of the lower one in stratum II. The former shows two different customs—post-exposure jar-burials, and post-cremation urns. The two ideas of cremation and exposure might have different origins but the end process i.e. interment in jars, is the same. Probably there were two clans of the same tribe or race. This complicated method of the disposal of the dead is probably associated with some cultural development. The custom seen in the stratum II of the Cemetery H at Harappa appears to be far more simple than the above.

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CHAPTER 7

RACIAL AFFINITIES

For a discussion of the races, which comprised the makers of the Indus Valley civilization, as unearthed by the various archaeological excavations, we have to depend mainly on the recently published report entitled Human Skeletal Remains from Harappa by P. Gupta, P. C. Dutta and A Basu, Calcutta, 1962. It has been a long awaited report since the first largest consignment of the skeletal remains was transferred from Harappa to the then Zoological Survey of India, Indian Museum, Calcutta by the present writer in April 1931. It was therefore presumed that the report in course of the last three decades, will be a thorough and detailed one. Instead of the same, it is distressing to see that a complete sex identification of the bones from the

various jar-burials* from stratum I of Cemetery H has not been even attempted. Only the complete and partially complete crania and a few long bones have been taken into consideration. As has already been pointed out in our discussion of the burial customs, a careful examination of the bone contents of each burial jar could have thrown more light on the methods of disposal of the dead belonging to this stratum of the Cemetery.

The report (Gupta *et al*, 1962) mentions 5 children from G area and all of them may not be children. Skeleton No. IS15 with a cranial length of 174 mm., a basion-bregma height of 119 mm., an auricular height of 102 mm. and a minimum frontal diameter of 92 mm. may not be of a child, alleged to be between 9-10 years on p. 82 and between 7-9 years on p. 186 (Gupta *et al*, 1962). Nothing has been stated of the dentition.

Then the difference of 15 mm. in cranial breadth between the crania IS1 and IIIS8, both mentioned to be nearly of the same age, although they show equal to nearly equal values in the case of other measurements, a few of which are given below (Table 4), is difficult to explain. The maxillary dentition of IS1 has been mentioned as follows; "first and second milk molars of both the sides are in tact, and permanent first molar lies deep in the socket". There is no mention of the dentition of the other.

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* See Appendix I.

TABLE 4

Comparative Measurements of Crania

IS1 and IIIS8 (in mm.)

No.	Age	Cr. leng.	Cr. br.	ba-b ht.	Aur. ht.	Nas. ht.	Sup. Fac. ht.
IS1	5-6 years.	166	126	110	101	31.5	42
IIIS8	6-7 „	166	111	109	99	31	44

Mention has already been made of the irregular and inadequate method of sexing in the case of skeletal remains from R. 37. A few other points may also be mentioned here. It has been stated on p. 28 of the report for skull No. H.793(A) that, "In absolute dimensions of certain characters the skull exceeds all the other skulls in the whole of the Harappan series". This is not however true and the point is worth discussing in view of the high cranial breadth (152 mm.) of the skull. The highest cranial breadth of all the Harappa crania has been reported to be that of 153 (?) mm. for H.695—also an earth burial, and the cranial length is also exceeded by the latter—193 mm. for H.695 compared to 190.5 mm. for H.793(A). H.255(a) has the highest cranial length of 198 mm. of all the Harappa skulls. The basion-bregma height of 137 mm. for H.793(A) is common and larger heights are reported. Then there is another unfortunate point regarding H.793(A). Its description reagrding missing teeth agrees with Figure 9 but not with Figure 10, though the two are printed side by side (p. 26). The complete nature of the maxilla will however be clear from the photographs of the same skull on Plate

XIX. It also appears from the above figures that much of the left parietal has been restored and as such the cranial breadth of 152 mm., given without any query, is not probably a dependable estimate. Queries have not also been mentioned in a few other cases. This is all the more regrettable when measurements have been taken on missing landmarks of the crania, which could be verified from the given craniograms. For instance, in the case of skull ISll, it has been stated that : "A distinct inclined and transverse cut at the nasal root by some sharp weapon is evidenced". The measurements, nasal height and superior facial height, have indeed been provided with queries, but there is a gross inaccuracy in the craniogram in Figure 59.

The same may also be said of the skull No. H.245(c) in which the "supraorbital margins and nasal bones" are missing as could be well seen from Figure 99, yet the cranial length (175 mm.) could be measured and given without any query. No other measurement but nasal breadth (25.5 mm.) has been given. This is the only skull having the highest brachycranial index of 84 and the lone female representative of the type B2 of Gupta *et al.* The male counterpart of this type is the lone H.206(B).

Cranial landmarks like glabella, inion have not been always correctly marked as in Figures 6, 85, etc. Craniograms do not agree with photographs as in Figures 15, 97, etc.

Then the authors of the Harappa report have not taken into account the indices of the crania excavated and

described by Wheeler (1947). It would have been worth while comparing the variations in the measurements with Wheeler since in many of the crania the endocranial earth has been removed, and how far the measurements vary due to the shrinkage of the cranial walls thereby. Wheeler unfortunately has not given the absolute dimensions, as such a comparative study could not be made. But that some shrinkage or contraction is likely as a result of the skull lying long in the laboratory or due to the removal of the endocranial earth will be apparent from the two crania excavated by Wheeler from Pot Nos. 11 and 12a. Gupta *et al* have given identical length, breadth and index of 173 mm., 131 mm., and 75.72 respectively for the above two crania, while the indices according to Wheeler are 76.30 and 73.99 respectively. The latter two indices indicate enormous variation in cranial form and the greater bizygomatic breadth of 125 mm. for the skull from Pot No. 11 in comparison to 116 mm. for the other, tend to support the indices given by Wheeler.

Similarly, Marshall (1931, p. 108) quotes the following from a note sent by Dr. B. S. Guha regarding the skull No. 7435 B from a jar-burial, stratum I, Cemetery H, as "mesaticephalic, with low cranial vault, medium nose and orbits, and marked alveolar prognathism; the frontal portion is well developed but rather sloping and the supraorbital ridges moderate". Marshall also adds "It is said to be quite distinct in type from any of the other skulls (whether

long-headed or broad-headed) found at Mohenjodaro and Harappa, and is regarded by Colonel Sewell and Dr. Guha as pointing to the presence of a different race at the latter site". According to Gupta *et al* the above skull has been found to be dolichocranial (Index—72.47 ?) and there are some differences in the morphological description as well.

It is worth while pointing out here, although we are not here concerned with the cranial remains from the mound area of Harappa, that the same type of difference in the cranial form has been found in respect of skull No. 5440 D, which according to Gupta *et al* is hyperdolichocranial (Index 69.95 ?) while according to Guha (Marshall, *op. cit.*) it is "unmistakably brachycephalic" with high-pitched nose.

In spite of the above shortcomings an attempt has been made on the basis of cranial length, breadth and index for the racial analysis of the then peoples of Harappa. It should be mentioned here that the above measurements are not subject to large procedural variations.

The importance of cranial index in racial diagnosis is already well known. Eugen Fischer's (1921) statement, "Each race has a typical cranial index" is now a dictum. Morant (1929) in his fundamental study on the assessment of cranial characters for their racial value finds that the length-breadth index of the skull is nearly twice as important as any other character. Facial measurements according to him are of the least diagnostic value. Kappers (1934) has also tested the validity of the cephalic or cranial index in his

masterly treatise. He uses the frequency distribution curve and emphasizes the importance of the length-breadth index as follows :

"According to my experience the length-breadth index is the most valuable of all the indices that can be measured on the living. It is indeed of such importance that, if the other measurements that might be taken and the indices calculated from them would be about the same in two groups and the peak of the length-breadth indices of these groups would show a distinct and constant difference, supposing that such a result might be found, the differing length-breadth index peak would be enough to exclude a direct kinship between these groups". Kappers also mentions of the variations in the index in course of evolution and suggests that the frequently associated cephalic or cranial index peaks may be mutations of one another—"mutations perhaps that are present in the genotype of each of them but whose appearance in the phenotype may depend on various circumstances".

The frequency curves of the cranial indices of the Harappa skulls are given in Figure 2.

The lower curve in the above figure shows the distribution of the cranial index of 29* crania from R. 37 along with 5 crania from stratum II of the Cemetery H (H_{II}), indicated by solid circles. The deviation of the curve of

* The addition of two crania is due to the inclusion of two female crania (Nos. 11 and 12a) from Wheeler's excavations. The cranial indices are 76.30 and 73.99 respectively.

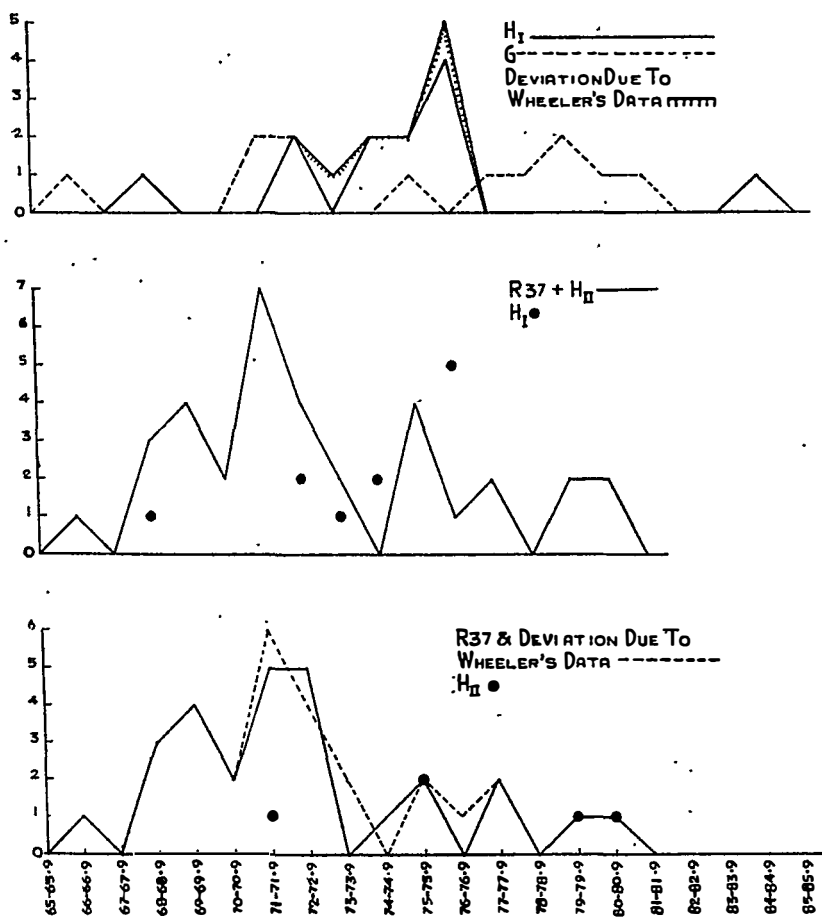



FIG. 2.

Frequency distribution curves of cranial indices of HARAPPA skulls.

[To face p. 79]

R. 37 due to the crania having different indices (Wheeler, 1947) is shown separately and the latter indices have been accepted in the present analysis in preference to those given by Gupta *et al.* The curve also gives a better picture thereby. R. 37 therefore shows an outstanding peak at the 71 index. There is also a lower peak at the hyperdolichocranial (69) end and two smaller ones at the mesocranial section.

The middle curve of Figure 2 shows the combined curve of R. 37 and H_{II}, comprising 34 crania. The solid circles show the position of the skulls from stratum I of Cemetery H (H_I). This curve shows the same picture as the lower one—the index peaks 71 and 75 having attained more prominence than those of the lower curve.

The upper curve of Figure 2 shows the cranial index curve of the skulls from H_I. It also shows a deviation due to Wheeler's data mentioned before. The outstanding peak of this curve is at 76 index. It falls to zero at 77 index and then there is a long gap till it rises to represent a single skull at the 84 index. This index belongs to skull No. H.245(e) and the reliability of its measurements is doubtful. On the above curve the indices of 12 crania (7 males, 2 females and 3 children) from area G have been superimposed. This latter curve shows two peaks, a clear one at 79 index and a flat one between 71-72.

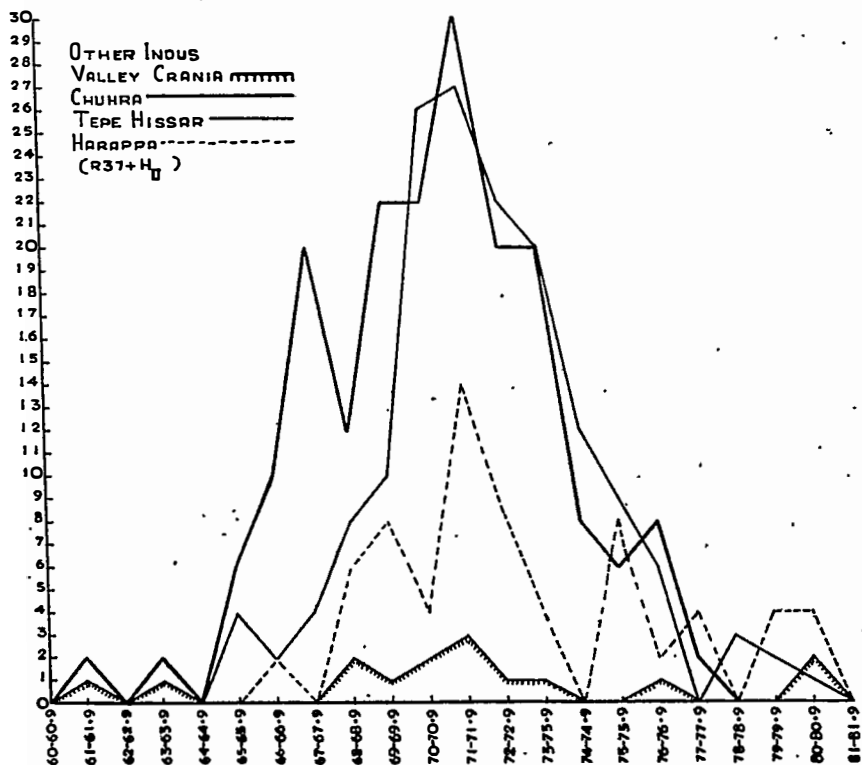
It will be apparent from Figure 2 that we are concerned with three populations: (a) a 71 cranial index people, which is predominant in burials of R. 37, (b) a 76 cranial

index people, represented mostly by the female population of the jar-burials, and (c) a group showing two different peaks—one nearly similar to (a) mentioned above and another 79 index people.

A few words are required here regarding the child crania from G area. The average cranial index of the three groups of crania is as follows :—

Average of 7 male crania	..	76.43
„ 2 female „	..	74.49
„ 3 child „	..	74.47

The above three children are probably above 5 years of age and as such their average index should be about 2 points higher than the adults if both belonged to the same race. We have already raised some doubts regarding the age of the children from the above area and the mean index given above shows a remarkable coincidence with the mean of the females. Of those who showed milk dentition, as in ISl and IIISl, the cranial index of the former is known—it being 75.90.

Kappers has identified the 71 cranial index people as Indo-Aryans as evidenced in Tepe Hissar and in the Chuhra of Panjab. In Figure 3 the cranial index curves of the above two groups have been superimposed on the Harappa cranial index curve from R. 37 (including H_{II}) and that of other Indus Valley crania, comprising those from Nal, Mohenjodaro and Chanhudaro. All the four groups show their outstanding peak at 71 index. Each of the four groups

Frequency distribution curves of cranial indices of HARAPPA, TEPE HISSAR, CHUHRA, & other INDUS VALLEY crania.

[To face p. 80]

shows a peak at the hyperdolichocranial end (below 70), which is very prominent among the Chuhra, then among the Harappans, then in Tepe Hissar and lastly among the other Indus Valley skulls. The Chuhra show a peak at 67, the Harappa at 69, Tepe Hissar at 65. and the Indus Valley crania at 68. On the mesocephalic end, the Harappa curve shows a clear peak at 75, which the Chuhra show at 76. Tepe Hissar crania are represented at each of the above two indices but a peak is clear at 78, before the curve falls to 77 to rise to the next two indices of 79 and 80 and finally to zero at 81.

Thus there is a general agreement among the four curves of Figure 3. The same will be apparent in the sexual variation in the crania of the three groups given in the table below. Apparently then we are dealing with the same dolichocephalic race in all the four groups. A dolichocephalic race often shows that the females have a higher average cranial index than males.

TABLE 5

Sexual Variation in Cranial Index.

	Tepe Hissar	Harappa	Chuhra
Male	70.8	71.66	70.66
Female	72.8	72.98	72.34
Difference	2.0	1.32	1.68

It appears then that the dolichocephalic Indo-Aryans spread out from Damghan probably during the III period (1500—2500 B.C. according to Kappers ; 2000—3000 B.C. after Schmidt's final dating).

Kappers has published two curves of the Tepe Hissar crania, one for crania from all the three periods, and another for those of periods I and II. Period III thereby shows an influx of mesocephalic crania, with indices of 75 and above. During the two earlier periods the curve ends at 76 with only two crania at 75.

The influx of mesocephals in the Indus Valley therefore appears to be contemporary or posterior to period III of Tepe Hissar. The G area shows more of it than any other area. It also shows the only male brachycranial skull (IIIS2) with an index of 81.29. The other three brachycranial crania, namely 80.24* from H_{II}, 80.63 from G, and 80.70 from R. 37 are all females. From the index point of view they are just on the border of meso-brachycranial forms and the higher nature of the female index will be clear from Table 5.

We may now discuss the variation in the cranial indices of the different groups. It will be clear from the following Table :

* This skull appears to have undergone some deformation as the "upper part of the forehead extending up to the bregma was chopped off".

TABLE 6

Range of Variability in Cranial Index.

Site	No. of Crania	Sex	Range	Mean	Remarks
R.37 & H_{II}	15	Male	68.06—79.79	72.57	—
	17	Female	66.30—80.70	73.40	—
H_I	1	Male	68.18	—	Index of H.255
	8	Female	72.47—76.88	74.74	84 Index skull excluded
G	7	Male	71.62—81.29	76.43	—
	2	Female	71.84—77.14	74.49	—
	3	Child	66.87—80.63	74.47	—

It will be seen from the above table that the female crania from R.37 show the highest range of variation (14.40 units) while those from H_I the lowest of all (4.41 units.). The male variability of R.37 is lower (11.73 units) than its female counterpart. The range is 9.67 units and 5.30 units for the males and females respectively of the G area, while that of 13.76 units for the children of the same area, thereby surpassing either of the two adult sexes, is difficult to explain.

The high variability of R.37 (the inclusion of crania from H_{II} within which has not caused any change) may probably be explained by the longer duration of this culture than that of H_I or G. In course of its long standing it has probably absorbed different ethnic elements. Besides the dominant 71 index peak similar to that of Tepe Hissar there were the autochthonous Australoids represented by the hyperdolichocranial peak (below 70). Writing about the Mohenjodaro crania Kappers* (1934) mentions, "Though such indices may be also Veddoid they may show as well that the Caspians entered India, sporadically, already before the great migration of the second millenium, as also in Sumer they may have occurred sporadically before the immigration of the Kassites".

To the present writer the hyperdolichocranial element appears to be Veddid or Australoid, and the latter type has been reported to be still living about the lakes in the Helmand basin (Coon, 1952).

The Australoid or Veddid affinity is also apparent in the frequency of the perforation of the olecranon fossa of the humerus, which has the highest frequency of 58% among the Vedda of Ceylon (Martin, 1928). This anomaly is seen more frequently in the left hand and in women than in the right hand and in men. Gupta *et al* have found this anomaly in the following skeletons at Harappa :

* Kappers has excluded the 76.37 and the 85.37 index crania from his table.

TABLE 7

Incidence of Olecranon Fossa of Humerus

Site	Skeleton No.	Side	Sex
H_{II}	H 488	Left	Female
	H 502G	Right	Male
	H 694	Left	„
	H 696	Right	„
	H 699	Left	Female
H_I	H 206a	Right	Female
	H 206d	„	„

The above anomaly is therefore seen in four females and three males ; the right hand being involved four times and the left thrice. If according to the Harappa report 78 and 26 individuals are accepted for H_I and H_{II} respectively, the percentage frequency of the incidence of the olecranon fossa of the humerus comes to 1.3 and 9.6 respectively. This probably supports more of the Veddid strain in H_{II} than that in H_I

The mesocranials of R. 37 represented by the 75 index peak are probably similar to those of Tepe Hissar found during periods I and II. This index is known to be the dominant peak in the Kurgan skulls from Central Russia and Ukraine (Kappers, 1934, fig. 65). Kappers thinks that they may be Scythian in origin.

Compared with the peoples of R. 37, those of H_I, which at Harappa are chiefly composed of females, appear to be

predominantly a 76 index people. We are probably dealing with another mesocranial people similar to that found during period III of Tepe Hissar with higher cranial indices than those found during periods I and II. It has already been mentioned there were no 76 index crania during the above two periods at Tepe Hissar. The Australoid element, is probably weakly represented in H—there is only one male skull with an index of 68.18 (H.255a). Its calculated cranial capacity of 1482.65 c.c. (Gupta *et al*) may assign it to an Indo-Aryan ethnic strain as well.

The G area remains probably represent an abortive attempt of an immigrant population to settle at Harappa. The skeletal remains, according to Gupta *et al*, show numerous cut marks, injuries and abrasions. The presence of women and children among the skeletal remains probably indicate that they were completely annihilated. It was probably a small band but more mixed in cranial form than that of H_I, as will be apparent from Table 6. There appears to be a low brachycranial element in the sample as seen in the cranial index of an adult male (81.29) and a child (80.63).

Gupta *et al* have used the term "round-headed" (p. 91) although the cranial index shows a mesocranial value. It however appears from our previous analysis that brachycranial index is a rarity in the Indus valley crania. The two brachycranial crania from G area show a low index and are probably a much later import and their probable complete annihilation shows that it had little effect on the cranial

form of Harappa. The 84 index of H.245c has already been discussed.

A few words are probably necessary regarding the child skull No. M.14 from Mohenjodaro (Marshall, 1931) with a cranial index of 85.37. First of all, the skull though belonging to a child, shows the highest cranial breadth of 140 mm. At Harappa cranial breadth of 140 mm. and above have only been found in 8 out of 75 adult crania. Then in respect of age the skull is comparable with the beheaded child skull No. M.32 from the further excavations at Mohenjodaro (Mackay, 1938). The latter shows a cranial length of 166 mm., a breadth of 122 mm., an auricular height of 124 mm. and a basion-bregma height of 134 mm. compared with 164, 140, 118.5 and 100 respectively of M.14. The latter basion-bregma height is probably too low —lower than that found in the children of G area. This low height might have caused the cranial walls bulge out thereby giving a high cranial breadth of 140 mm. Such is likely to occur due to the superincumbent pressure of the earth or the result of some pathological change, which may not be racial in nature. At least there is no proof of such a high index (85.37), which should be one or two points lower in adults, among the other cranial remains of Mohenjodaro. On the other hand the cranial index of M.32 (73.49) appears to show a good adult-child relationship. The mean of 6 Mohenjodaro crania (Marshall, 1931), chosen to be the best measured of all by Kappers (1934), and the two

more crania from Mackay's excavations (1938), works up to 70.69. M.14 with an index of 85.37 stands wide apart from the above average. On these evidences it appears that brachycranial index was nearly absent at Mohenjodaro. If the two extraneous brachycranials from G area are excluded its evidence at Harappa is also meagre. There are only two female crania, one from R.37 (H.798/A, index—80.70) and another from H_{II} (H. 699, index—80.24) which fall within the brachycranial class. Really speaking they are cases of extreme mesocranially and are probably the effects of the highest variability of the females from the earth burials of Harappa (Table 6).

The jar-burials from Harappa have its parallel in the same type of burials discovered in the Pulney Hills (Anglade, 1943) and at Aditannallur in South India. At Aditannallur, Rea (1904) has mentioned, though not in many details, jar-burials having a selection of bones in the majority of cases. This obviously presupposes an exposure of the corpses prior to their disposal in the jars. Rea also mentions a few instances of complete bones of a skeleton, in which "the body had been set inside in a squatting or sitting position". He further states, "on its decay, the leg and arm bones fell over and rested against one side of the urn, while the skull, ribs, and vertebrae dropped down to the bottom. This was the position in which every complete skeleton, without exception, was found". Rea does not state whether the skull and the other bones were found in their normal position or not. If the skeleton was inserted headwards within

the jar all the bones of the skeleton would lie upside down. But the primary desideratum is a list of the bones of the skeleton. What little is known of the Aditannallur human skeletons pertains to some crania only—nothing is known of the rest of the skeleton. Till this is known it will be difficult to accept Rea's contention of complete skeletons.

The same may also be said regarding the jar-burials found at the Pulney hills by Rev. Anglade (1943). At the above site 15 jar-burials (funeral urns) were found, of which five contained human bones. Although Rev. Anglade describes the method of inserting complete human bodies before *rigor mortis,* by inserting the legs first and then pressing the body within the jar there was one instance of a dismembered skull in an urn (No. 8). In the latter case "the skull is in a pot and the long bones are in or around three other pots". It is probable that the body was first of all exposed and then the bones were deposited within the urn after they were held in smaller vessels.

The jars of the Pulney hills according to Anglade were of the following size: height varying between 26 and 40 inches; the circumference between 64 and 92 inches, and the diameter of the mouth between 14 and 21 inches. Human bodies having thoracic and hip girths less than 21 inches could then be pushed within the jar but there are few adult bodies, which show sucn low girths as above. It is however not known whether the skeletons belonged to adults or to children. The present writer had the

opportunity to see a few of the above human remains in the excellent museum of the Sacred Hearts College, Shembaganur, Madurai, in May 1960 exhibited in showcases and they appeared to be adults. Although nothing definite can be stated without a detailed study of the human remains it appears probable that the bones were deposited within the jar after the body was exposed to the elements. It is almost clear from the bones found in urn No. 8 mentioned above. It may be mentioned here that the burial jars of South India are much larger in size than those of Harappa. Probably the large size was meant to contain the various personal belongings of the dead, as found in the South Indian sites mentioned above.

Then, similar to those found at Harappa, Rea and Anglade have found many urns without any trace of human bones. A few urns at Aditannallur showed traces of ashes but Rea rules out cremation. He says, "They were apparently due to combustion of wood used during some ceremony of burial". It is difficult to see why there were no traces of the ceremony outside the jar.

Detailed excavations at Aditannallur and the Pulney hills are urgently necessary to assess the earlier findings, and also to find out how far a parallelism with Harappa is tenable. It is possible that the custom of post-exposure jar-burial, which appears to be similar at Harappa, Aditannallur and the Pulney hills, diffused from the Panjab to South India along with the migration of the same people. There is also some evidence of mesocephaly among the six

Aditannallur cranial indices published by Thurston (1909). The cranial indices are :—

66.0 —1
66.5 —1
67.8 —2
71.1*—1
78.0 —1
6

The above six indices show only two forms of crania, (a) long-headed, as seen in the first four indices, and (b) mesocranial, as seen in the last index. The latter appears to be closer to the medium index peaks found in stratum I of Cemetery H and at G site at Harappa. (Fig. 2, upper curve).

The 77 index people (Iranian) has been supposed to be responsible for the introduction of iron (Kappers, 1934, p. 154) and this index is also known to be dominant among Iron Age crania. The association of iron and mesocephaly at Aditannallur may therefore be significant. But before that we must know more of the Aditannallur and the Pulney hills skeletal remains from a careful and methodical excavation.

The identification of the Indus Valley people with those of Tepe Hissar, and that the latter people, according to Kappers, shows a close ethnic relationship with the Chuhra and the Sikh (Eickstedt, 1920-21) of the Panjab probably

* This index is printed as 77.1 in Thurston (1909, I, xxvi). With the cranial length of 180 mm. and breadth of 128 mm. the index should be 71.1.

calls for a revision of the heitherto used linguistic term Indo-Aryan. Kappers writes: "The race to which the Damghan people belonged was closely related to the neolithic longheads of Central Russia as well as to the Panjab people of the present time as will appear further on".

He further states: "This race, migrating from the Aral-Caspian basin along with the upper stream-beds of the Syr and Amou Darja, entered the narrow. passes of the Hindoo-Koosh and, finding on its southern slopes the sources and upper stream-beds of the Indus, finally reached the Panjab".

Kappers has also used the terms Caspian and Indo-Aryan synonymously several times in his book. One of his quotations will be seen before (p. 84). Then he states on p. 112: "Apparently it is only in the second millenium that the wider spread of our Caspians or Indo-Aryans in these regions took place".

Then again on p. 125: "The dolichocephalic (71 peak) Caspians or Indo-Aryans may have been the earliest and most numerous". Besides the above there is mention of the same in other pages of the book.

And then lastly the title of his chapter in which he discussed the above problem is: "The migrations of the Caspian Indo-Aryans".

Sir William Jones first used the term Aryan for a group of Indian languages (Huxley, 1939). In 1853 Max Müller applied it to a group of languages and the two assumptions

on which he based his linguistic Aryan theory have now proved to be erroneous. He introduced thereafter the most unhappy term "Aryan race", which soon resulted into a superiority complex in Europe, as will be obvious from the then published works. It saw its climax in Germany and in Italy before the second global war. Towards the latter part of his life Max Müller (1888) wrote against the ethnic usage of the term Aryan but the mischief was already enormous due to its repeated use by various scholars. Julian Huxley (1939) puts the whole thing very ably.

"Max Müller frequently repeated his protest, but alas! 'the evil that men do lives after them, the good is oft interred with their bones'! Who does not wish to have had noble ancestors"?

Now that the Harappa and the other Indus valley crania show the antiquity and identity with those from Tepe Hissar, both belonging to the second millenium it will be useful to replace the term Indo-Aryan by that of Indo-Caspian. The term Aryan is linguistic and its use in the ethnic sense is a misnomer. As Huxley points out, "If the term 'Aryan' is given a racial meaning at all, it should be applied to that tribal unit, whatever it was, that first *spoke a language* distinguishable as Aryan". Till such a tribal unit is discovered we should refrain from using the term Aryan in the ethnic sense. On the other hand the term Indo-Caspian is purely geographical. It shows the extent of a widespread racial type in the distant past and forms thereby a common base of many human activities.

Summing up then we find that the dolichocephals of the Indus Valley, showing a cranial index of 71, are an extension of the Tepe Hissar people represented during periods I and II at the latter site. During the III period of Tepe Hissar mesocephals, probably of ancient Scythian origin, arrived from Ukraine and Central Russia. They probably entered India almost contemporaneously or afterwards. It is probable that the mesocephals migrated in different waves, two of which are represented at Harappa—one seen in stratum I of the Cemetery H and the other at G site. The last wave shows weak traces of brachycephaly, which is rare in the Indus Valley during the earlier periods and in those contemporaneous with Tepe Hissar I and II. An autochthonous hyperdolichocranial element represented by the Veddid or Australoid ethnic strain appears to be at the base of the Indus Valley people. They have been erroneously called Proto-Australoid by Sewell and Guha in their studies of the Indus Valley crania. It is suggested that the term Indo-Caspian be used instead of Indo-Aryan.

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APPENDIX I

Jar Burials from Harappa excavated during 1930-31.

The Appendix I (p. 242-245) of the Harappa Excavation Report by M. S. Vats (1940) showing contents of burial jars from stratum I of Cemetery H was prepared by the present writer at the instance of the late Mr. Vats. For some reasons best known to the latter, the sex and age of the skeletons ascertained by the present writer during the preliminary examinations at the field, were omitted from the above Appendix. The present writer was assigned the duty of submitting the daily diary of the whole excavation and he is not in possession of them. The following table has therefore been prepared from rough notes on skeletons now in his possession. It is published because of some new and independent information regarding the sex and age of the skeletons. Gupta *et al* (1962) have mentioned the age and sex of only 14 out of the 63 skeletons listed in the table below. It will be seen therefrom that the sexes of 2 crania, H.61, H.153(a) do not agree. According to the above authors they are females (p. xxxii). The present writer recorded them as males however. Gupta *et al* do not mention anything in their descriptive notes regarding the sex and age

TABLE 1

List of Jar-Burials excavated at Harappa during 1930-31

Sl. No.	Skeleton	Sex	Age	Sl. No.	Skeleton	Sex	Age
1.	H.61	male	adult.	33.	H.245(a)	female ?	18-20 yrs.
2.	H.62(d)	?	,,	34.	H.245(c)	?	adult.
3.	H.62(e)	?	,,	35.	H.245(d)	?	infant.
4.	H.83	?	< 2 yrs.	36.	H.245(e)	male	adult.
5.	H.146(a)	?	adult	37.	H.246(a)	fragmentary	—
6.	H.146(b)	?	16-18 yrs.	38.	H.246(c)	male	old.
7.	H.148(a)	?	infant	39.	H.246(d)	?	adult.
8.	H.184(b)	?	adult	40.	H.246(e)	?	,,
9.	H.151(a)	fragmentary	—	41.	H.247(a)	?	,,
10.	H.151(b)	,,	—	42.	H.247(b)	?	,,
11.	H.152(b)	,,	—	43.	H.249	?	,,
12.	H.153(a)	male	adult	44.	H.250	?	*ca.* 3 yrs.
13.	H.153(c)	?	,,	45.	H.251	?	infant.
14.	H.153(d)	?	,,	46.	H.253(b)	female ?	adult.
15.	H.154(a)	female	,,	47.	H.255(a)	male	adult.
16.	H.154(b)	?	,,	48.	H.342(a)	fragmentary	—
17.	H.156(a)	?	infant	49.	H.344	male	old.
18.	H.165(a)	?	,,	50.	H.346(a)	?	adult.
19.	H.167	?	adult	51.	H.346(b)	?	16-18 yrs.
20.	H.168	?	child	52.	H.614	?	infant.
21.	H.169	?	infant	53.	H.615	?	infant.
22.	H.187	?	adult	54.	H.619	?	,,
23.	H.206(a)	?	12-16 yrs.	55.	H.620(a)	?	,,
24.	H.206(b)	male	adult	56.	H.620(b)	?	10-14 yrs.
25.	H.206(c)	?	,,	57.	H.622	?	infant.
26.	H.206(d)	female	,,	58.	H.624	?	bones & charcoal.
27.	H.206(g)	?	,,	59.	H.625	?	infant
28.	H.206(h)	?	,,	60.	H.673	?	,,
29.	H.231(a)	?	infant	61.	H.679	?	,,
30.	H.231(b)	?	,,	62.	H.681	?	child.
31.	H.231(c)	?	,,	63.	H.682	?	adult.
32.	H.235	?	adult.				

of the two crania. There is no photograph of any of the skulls from which further remarks can be made.

No bones were found in the following 18 jars :

H.502(a), H.616, H.617, H.618 (charcoal), H.620(c), H.620(d), H.621, H.623 (charcoal), H.626, H.674, H.675, H.676, H.677, H.678, H.680, H.683, H.684, H.685.

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پڙهندڙ نَسُل . پَ نَ

The Reading Generation

1960 جي ڏهاڪي ۾ عبدالله حسين " اُداس نسلين" نالي ڪتاب لکيو. 70 واري ڏهاڪي ۾ وري ماڻڪَ "لُڙهندڙ نَسُل" نالي ڪتاب لکي پنهنجي دورَ جي عڪاسي ڪرڻ جي ڪوشش ڪئي. امداد حُسينيءَ وري 70 واري ڏهاڪي ۾ ئي لکيو:

انڌي ماءُ ڄڻيندي آهي اونڌا سونڌا ٻارَ
ايندڙ نسل سَمورو هوندو گونگا ٻوڙا ٻارَ

هر دور جي نوجوانن کي اُداس، لُڙهندڙ، ڪَڙهندڙ، ڪُڙهندڙ، ٻَرندڙ، ڇُرندڙ، ڪِرَندڙ، اوسيئڙو ڪَندَڙُ، ياڙي، ڪاٺُو، ياجوڪَڙُ، ڪاوڙيل ۽ وِڙهندڙ نسلن سان منسوب ڪري سَگهجي ٿو، پَر اسان اِنهن سڀني وِچان "پڙهندڙ" نسل جا ڳولائو آهيون. ڪتابن کي ڪاڳر تان کڻي ڪمپيوُٽر جي دنيا ۾ آڻڻ، ٻين لفظن ۾ برقي ڪتاب يعنيٰ e-books ناهي ورهائڻ جي وسيلي پڙهندڙ نسل کي وَڌڻ، ويجهَڻ ۽ هِڪَ ٻِئي کي ڳولي سَهڪاريِ تحريڪ جي رستي تي آڻِڻَ جي آسَ رکون ٿا.

پڙهندڙ نَسل (پَنَ) ڪا بہ تنظيمَ ناهي. اُنَ جو ڪو بہ صدر، عُهديدار يا پايو وِجهندڙ نہ آهي. جيڪڏهن ڪو بہ شخص اهڙي دعويٰ ڪري ٿو تہ پَڪَ ڄاڻو تہ اُهو ڪُوڙو آهي. نہ ئي وري پَنَ جي نالي ڪي پئسا گڏ ڪيا

ويندا. جيڪڏهن ڪو اهڙي ڪوشش ڪري ٿو ته پَڪَ ڄاڻو ته اُهو بِه ڪُوڙو آهي.

جَهڙِيءَ طَرَح وڻن جا پَنَ ساوا، ڳاڙها، نيلا، پيلا يا ناسي هوندا آهن اَهڙيءَ طرح پڙهندڙ نَسُل وارا پَنَ بہ مختَلِف آهن ۽ هوندا. اُهي ساڳِئي ئي وقت اُداس ۽ پڙهندڙ، بَرندڙ ۽ پڙهندڙ، سُست ۽ پڙهندڙ يا وِڙهندڙ ۽ پڙهندڙ بہ ٿي سگهن ٿا. بين لفظن ۾ پَنَ ڪا خُصوصيِ ۽ تالي لڳل ڪِلَب Exclusive Club نہ آهي.

ڪوشش اها هوندي تہ پَنَ جا سڀ ڪَم ڪار سَهڪاري ۽ رَضاڪار بنيادن تي ٿين، پر ممڪن آهي تہ ڪي ڪم اُجرتي بنيادن تي بہ ٿِين. اهڙي حالت ۾ پَنَ پاڻ هِڪَبِئي جي مدد ڪَرڻ جي اُصولَ هيٺ ڏي وَٺُ ڪندا ۽ غيرتجارتي non-commercial رهندا. پَنَن پاران ڪتابن کي ڊِجيٽائِيز digitize ڪرڻ جي عَملَ مان ڪو بہ مالي فائدو يا نفعو حاصل ڪرڻ جي ڪوشش نہ ڪئي ويندي.

ڪتابن کي ڊِجيٽائِيز ڪرڻ کان پو ٻيو اهم مرحلو وِرهائڻ distribution جو ٿيندو. اِهو ڪم ڪرڻ وارن مان جيڪڏهن ڪو پيسا ڪمائي سگهي ٿو تہ ڀلي ڪمائي، رُڳو پَنَن سان اُن جو ڪو بہ لاڳاپو نہ هوندو.

پَنَن کي کُليل اکرن ۾ صلاح ڏجي ٿي تہ هو وَسَ پٽاندڙ وڏِ کان وَڌِ ڪتاب خريد ڪَري ڪتابن جي ليکڪَن، ڇپائيندڙن ۽ ڇاپيندڙن کي هِمٿائِن. پر ساڳِئي وقت عِلم حاصل ڪرڻ ۽ ڄاڻ کي ڦهلائڻ جي ڪوشش دوران ڪَنهن بہ رُڪاوٽَ کي نہ مڃن.

شيخ اَيازَ علمَ، چانڳَ، سمجهَ ۽ ڏاهپَ کي گيتَ، بيتَ، سِٽَ، پُڪارَ سان تَشبيهه ڏيندي انهن سيني کي بَمن، گولين ۽ بارودَ جي مدِ مقابل بيهاريو آهي. اياز چوي ٿو تہ:

گيتَ بہِ جڻ گوريلا آهن، جي ويريءَ تي وار ڪَرن ٿا.

... ...

جئن جئن جاڙ وڏي تي جَڳَ ۾، هو ٻوليءَ جي آڙ ڇُپن ٿا؛
ريتيءَ تي راتاها ڪن ٿا، موٽي مَنجهہِ پهاڙ ڇُپن ٿا؛

... ...

ڪالهہَ هُيا جي سُرخ گُلن جيئن، اڄڪلهہ نيلا پيلا آهن؛
گيتَ بہِ جڻ گوريلا آهن........

... ...

هي بيتُ اَٿي، هي بَم ـ گولو، جيڪي بہ ڪٽين، جيڪي بہ ڪٽين!
مون لاءِ ٻنهي ۾ فَرَقُ نہ آ، هي بيتُ بہ بَمَ جو ساٿي آ،
جنهن رِڻَ ۾ رات ڪَيا راڙا، تنهن هَڏَ ۽ چَمَ جو ساٿي آ ـ

اِن حسابَ سان اڻڄاڻائي ڪي پاڻَ تي اِهو سوچي مَڙهڻ تہ ”هاٿي ويڙهہ ۽ عمل جو دور آهي، اُن ڪري پڙهڻ تي وقت نہ وڃايو“ ناداني‌ءَ جي نشاني آهي.

پَنَن جو پڙهڻ عام ڪِتابي ڪيڙن وانگر رُڳو نِصابي ڪتابن تائين محدود نہ هوندو. رڳو نصابي ڪتابن ۾ پاڻ کي قيد ڪري ڇڏڻ سان سماج ۽ سماجي حالتن تان نظر ڪجي ويندي ۽ نتيجي طور سماجي ۽ حڪومتي پاليسيون policies اڻڄاڻن ۽ نادانن جي هٿن ۾ رهنديون. پَنَ نِصابي ڪتابن سان گڏوگڏ ادبي، تاريخي، سياسي، سماجي، اقتصادي، سائنسي ۽ ٻين ڪتابن کي پڙهي سماجي حالتن کي بهتر بنائڻ جي ڪوشش ڪندا.

پَڙهندڙ نَسُل جا پَنَ سيني کي **چوڻ، چالاڪ ۽ ڪينئن** جهڙن سوالن کي هر بَيانَ تي لاڳو ڪرڻ جي ڪوشَ ڏين ٿا ۽ انهن تي ويچار ڪرڻ سان گڏ جوابَ ڳولڻ کي پنهنجو حق، فرض ۽ اڻٽر گهرج unavoidable necessity سمجهندي ڪتابن کي پاڻ پڙهڻ ۽ وڌ کان وڌ ماڻهن تائين پهچائڻ جي ڪوشش جديد ترين طريقن وسيلي ڪرڻ جو ويچار رکن ٿا.

توهان بہ پڙهڻ، پڙهائڻ ۽ ڦهلائڻ جي اِن سهڪاري تحريڪ ۾ شامل ٿي سگهو ٿا. بَس پنهنجي اوسي پاسي ۾ ڏِسو، هر قسم جا ڳاڙها توڙي نيرا، ساوا توڙي پيلا پن ضرور نظر اچي ويندا.

وڻ وڻ کي مون ڀاڪِي پائي چيو تہ ”منهنجا ڀاءُ
پهتو منهنجي من ۾ تنهنجي پَنَ پَنَ جو پڙلاءُ“.
- اياز (ڪي جو بيجل بوليو)